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Paper No. 01

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

The management of systems or processes that creates goods and provides services is known as:

► **Operation Management**

► Operation/production Management

► Operation/Research Management

► Production/Research Management

Ref: Operations Management (The management of systems or processes that create goods and/or provide services) (**Handouts Page No. 03**)

Question No: 2 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per shift?

► Capital

► Energy

► **Labor**

► Machine

Ref: Labor Productivity:

• Units of output per labor hour

• Units of output per shift

• Value-added per labor hour (**Handouts Page No. 19**)

Question No: 3 (Marks: 1) - Please choose one

Which one of the following forms of productivity is expressed as dollar value of output per kilowatt hour?

► Machine

► Capital

► **Energy**

► Labor

Ref: Energy Productivity:

• Units of output per kilowatt-hour

• Rupee value of output per kilowatt-hour (**Handouts Page No. 19**)

Question No: 4 (Marks: 1) - Please choose one

What would be the productivity if a machine produced 50 units in 3 hours?

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- ▶ 0.066 units per hr
- ▶ **16.66 units per hr**
- ▶ 6.766 units per hr
- ▶ 60.66 units per hr

Ref: Productivity is a measure of the effective use of resources, usually expressed as the ratio of output to input. Also called Efficiency at times

Productivity = Units Produced / Hours

Productivity = 50 / 3 = 16.66 per hour

Question No: 5 (Marks: 1) - Please choose one

Which of the following functions of an organization consists of all activities directly related to production of a good or service?

- ▶ **Operations**
- ▶ Marketing
- ▶ Accounting
- ▶ Finance

Ref: The Operations function consists of all activities that are directly related to production of a good or service. (Handouts Page No. 7)

Question No: 6 (Marks: 1) - Please choose one

Which of the following is **NOT** a decision to be made by operations managers?

- ▶ How much capacity is required to balance demand?
- ▶ What should be the location and layout of a facility?
- ▶ How to improve operational efficiency?
- ▶ **Which market areas to manufacture the products for?**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4471/1144826.cw/index.htm

(See the Question No. 08)

Question No: 7 (Marks: 1) - Please choose one

All of the following are the decision areas of an operations manager EXCEPT:

- ▶ **Financial reporting**
- ▶ Inventory management
- ▶ Scheduling tasks
- ▶ Supply chain management

Ref: Major operations decisions areas include inventory, capacity, quality, scheduling, process type, technology, location, layout, and supply chain management.

<http://en.allexperts.com/q/Management-Consulting-2802/2011/2/Production-Operations-Management-1.htm>

Question No: 8 (Marks: 1) - Please choose one

Organizational strategies relate to which of the following sets of factors?

- ▶ **Survival, profitability, growth rate and market share**

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- ▶ Profitability, survival, leads times and target market
- ▶ Quality, operating resources, growth rate and market share
- ▶ Scheduling, profitability, lead times and survival

Ref: Survival, profitability, Growth rate, market share (Book Page/Slide No. 13)

http://docs.google.com/viewer?a=v&q=cache:bYWPslg99IJ:highered.mcgraw-hill.com/sites/dl/free/0073525251/886181/stevenson11e_sample_ch02.pdf+Organizational+strategies+relate+to+which+of+the+following+sets+of+factors?+%E2%96%BA+Survival,+profitability,+growth+rate+and+market+share+%E2%96%BAProfitability,+survival,+leads+times+and+target+market+%E2%96%BAQuality,+operating+resources,+growth+rate+and+market+share+%E2%96%BAScheduling,+profitability,+lead+times+and+survival&hl=en&gl=pk&pid=bl&srcid=ADGEEShIkJnaEXjh-LIA3HACWDXOFhSy4GxPv8YQXZJIU3WT0go2JJj8vnbbzyuq3hxydg1DjvPnqXn6l7_WK80EPHn15OYu_iNw-luxMf0zGIxME7Z2JTjx1YPoSJERrLKF0cWbvkXb&sig=AHIEtbRBvXb8MDQZrhUT8qmH-CP_4ToLlw&pli=1

Question No: 9 (Marks: 1) - Please choose one

Which of the following statements describes an order-qualifier characteristic?

- ▶ A competitive dimension used to make final decision among competitors
- ▶ A factor which directly and significantly contribute to winning business
- ▶ A factor which increases the profitability of the organization
- ▶ **A factor perceived as a minimum standard as a potential for purchase**

Ref: Order qualifiers are those significant characteristics that service customers perceive as minimum standards of acceptability to be considered as a potential purchase while order winners (Handouts Page No. 15)

Question No: 10 (Marks: 1) - Please choose one

To make operations strategy effective it should be:

- ▶ Independent of the organization's strategy
- ▶ **Consistent with the organization's strategy**
- ▶ Developed by a first line manager
- ▶ Independent of time dimension

Ref: Operations strategy – The approach, consistent with organization strategy that is used to guide the operations function. We first study strategy design process with example for manufacturing and Services. (Handouts Page No. 14)

Question No: 11 (Marks: 1) - Please choose one

Which one of the following correctly explains the qualitative forecasting technique?

- ▶ It consists mainly of numerical descriptions and defies subjective inputs of managers.
- ▶ It consists mainly of subjective inputs and defies particular numerical descriptions
- ▶ **It consists mainly of subjective inputs and defies human factor, personal**

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opinions.

- It consists mainly of analyzing objective and hard data and defies human factor, opinion.

Ref: Qualitative Techniques which use subjective inputs and no numerical data. It relies solely on soft information like human factors, personal opinion, hunches. Thus Qualitative Forecasts are often biased and tilted towards what the management wants to predict. (Handouts Page No. 34)

Question No: 12 (Marks: 1) - Please choose one

Which one of the following correctly explains the quantitative forecasting technique?

► **It consists mainly of numerical descriptions and resist subjective inputs of managers.**

- It consists mainly of subjective inputs and resist particular numerical descriptions.
- It consists mainly of subjective inputs and resist human factor, personal opinions.
- It consists mainly of analyzing objectives and hard data and resist human factor, opinion.

Ref: Quantitative research focuses on numbers or quantities. Quantitative studies have results that are based on numeric analysis and statistics. Often, these studies have many participants. It is not unusual for there to be over a thousand people in a quantitative research study. It is ideal to have a large number of participants because this gives analysis more statistical power.

http://www.associatedcontent.com/article/1622269/what_is_the_difference_between_qualitative.html

Question No: 13 (Marks: 1) - Please choose one

Possible future demand	
Low (Rs.)	High (Rs.)
10,000	8,000
12,000	20,000
18,000	15,000

Which one of the following is the correct payoff under MAXIMIN approach?

► **Rs. 8,000**

- Rs. 12,000
- Rs. 18,000
- Rs. 20,000

Ref: Highest minus minimum

$\text{MAXMIN} = 20000 - 12000 = 8000$

Question No: 14 (Marks: 1) - Please choose one

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Given the table:

Alternatives	Possible future demand	
	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000
Large facility	18,000	15,000

Which one of the following is the correct Pay off under LAPLACE approach?

- ▶ Rs.9,000
- ▶ Rs.16,000
- ▶ Rs.33,000
- ▶ **Rs.16,500**

Ref: Take average for each alternative and choose the alternative with best average.

Small facility = $10000+8000=18000/2=9000$

Medium facility = $12000+20000=32000/2=16000$

Large facility = $18000+15000=33000/2=16500$

Question No: 15 (Marks: 1) - Please choose one

Which one of the following is NOT a step of strategy process?

- ▶ Develop alternatives
- ▶ Monitor results
- ▶ **Consider risk averseness strategies**
- ▶ Specify criteria for decision

Ref: Normally the decision making process involves the following six important steps

1. Specify Objectives and the Criteria for decision making

2. Develop Alternatives

3. Analyze and compare alternatives.

4. Select the best alternative.

5. Implement the chosen Alternative

6. **Monitor the results** to ensure the desired results are achieved. (Handouts Page No. 24)

Question No: 16 (Marks: 1) - Please choose one

As an operations manager you have collected data about the demand of certain product "P" over time "t". The data shows short-term fairly regular variations over the time period "t". Which one of the following is correctly explaining the behavior of the data?

- ▶ Cycle
- ▶ Random variation

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► **Seasonality**

► Trend

Ref: Seasonality - short-term fairly regular variations in data related to factors like weather, festive holidays and vacations mostly experienced by supermarkets, restaurants, theatres, theme parks. (**Handouts Page No. 37**)

Question No: 17 (Marks: 1) - Please choose one

Which one of the following formula can be used to compute break even point?

► $Q = VC / (R - VC)$

► **$Q = FC / (R - VC)$**

► $Q = VC / (R + FC)$

► $Q = FC / (R + VC)$

Ref: QBEP = FC / (R - VC) (Handouts Page No. 76)

Question No: 18 (Marks: 1) - Please choose one

ABC Corporation has planned to purchase a new machine. Total annual fixed cost is Rs. 10,000, variable cost is Rs. 5 per unit and revenue is Rs. 7 per unit. What would be the break even point?

► 833 units

► 2000 units

► **5000 units**

► 1012 units

Ref: QBEP = FC / (R - VC)
QBEP = 10000 / (7-5)
QBEP = 10000/2
QBEP = 5000 Units

Question No: 19 (Marks: 1) - Please choose one

Which one of the following manufacturing process is associated with high volume car manufacture?

► Job shop

► **Assembly line**

► Batch

► Automation

Ref: Before discussing JIT look at in-line assembly systems (traditionally used in high volume car manufacture)

http://webcache.googleusercontent.com/search?q=cache:rJ2HjqtUCIQJ:www.ocr.org.uk/download/sm/ocr_13258_sm_gce_unit_f524.doc+%22manufacturing+process%22+for+%22high+volume+car+manufacture?%22&hl=en

Question No: 20 (Marks: 1) - Please choose one

Which one of the following is a characteristic of continuous process?

► High lead times

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- ▶ Short process times
- ▶ The ability to handle high variety
- ▶ **The ability to handle high volumes**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4472/1144864.cw/index.htm

(In Multiple Choice Questions See the Question No. 11)

Question No: 21 (Marks: 1) - Please choose one

Which of the following refers the way an organization chooses to produce its good or services?

- ▶ **Process selection**
- ▶ Process reengineering
- ▶ Process redesign
- ▶ Process design

Ref: Process Selection refers to the way an organization chooses to produce its good or services. **(Handouts Page No. 77)**

Question No: 22 (Marks: 1) - Please choose one

Which one of the following is an example of business that uses job shop process structure?

- ▶ **French restaurants**
- ▶ Heavy equipment
- ▶ Sugar refinery
- ▶ Automobile assembly

Ref: Examples of a job shop include a machine tool shop, a factory machining center, paint shops, a French restaurant, a commercial printing shop, and other manufacturers that make custom products in small lot sizes. <http://www.enotes.com/small-business-encyclopedia/job-shop>

Question No: 23 (Marks: 1) - Please choose one

In which of the following layouts, work stations are arranged according to the general function they perform without regard to any particular product?

- ▶ Product
- ▶ **Process**
- ▶ Fixed-position
- ▶ Storage

Ref: In a Process layout, work stations are arranged according to the general function they perform without regard to any particular product.

<http://www.scribd.com/doc/12630674/MBA-IIInd-SEM-POM-Chapter02-Layoutsimplified>

Question No: 24 (Marks: 1) - Please choose one

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Which of the following layout types is associated with a supermarket?

- ▶ Fixed position layout
- ▶ **Process layout**
- ▶ Product layout
- ▶ Cellular layout

Ref: Supermarket layouts are essentially process layouts,

http://docs.google.com/viewer?a=v&q=cache:ISjqXnqJinsJ:hkilter.com/courses/541/isl541_06.ppt+Which+of+the+following+layout+types+is+associated+with+a+supermarket%3F+%E2%96%BAFixed+position+layout+%E2%96%BAProcess+layout+%E2%96%BAProduct+layout+%E2%96%BACellular+layout&hl=en&gl=pk&pid=bl&srcid=ADGEESgjL0-us6bizOKeoG1FGkiYM86aIVo2pXsLNVhz2QCo4kalE27S2tQ6SGYrSzkeJHrBPIQd8zLHJm81nlwYCUNOvk8tSFyigfDzc4g8VsRZepfWBN0HTMjj8J8Fghtf50D4L0VW&sig=AHIEtbTxrTJMumkozSV9o2BjZrPMqDx2HQ

Question No: 25 (Marks: 1) - Please choose one

OSHA stands for which one of the following?

- ▶ Occupational stock hygiene administration
- ▶ **Occupational safety hygiene administration**
- ▶ Occupational safety hygiene agency
- ▶ Occupational science hygiene administration

Ref: OSHA refers to Occupational Safety Hygiene Administration (**Handouts Page No. 46**)

Question No: 26 (Marks: 1) - Please choose one

In order to comply with the environmental standards, an organization implement Occupational Safety Hygiene Administration (OSHA) following is a way to accomplish this task?

- ▶ Promoting friendly relations among employees
- ▶ **Installing safety guards and devices to reduce the risk**
- ▶ Installing machinery to make the process speedy
- ▶ Installing machinery that provides cost effective output

Ref: The role of OSHA is to develop and enforce workplace safety standards, offer compliance assistance, training and education. http://www.cwru.edu/med/epidbio/mphp439/Wellness_Workplace.htm

Question No: 27 (Marks: 1) - Please choose one

Which one of the following statements is TRUE about product life cycle?

- ▶ It depicts demand of a product at various price levels
- ▶ **It depicts demand of a product with respect to time**
- ▶ It relates demand of a product to quality
- ▶ It relates demand of a product to market share

Ref: (See the handouts Page No.50 Diagrammed)

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Question No: 28 (Marks: 1) - Please choose one_____

Which one of the following is TRUE about Taguchi Approach?

▶ **To test the robustness of a design**

▶ To articulate the “voice of the customer”

▶ To reduce the degree of automation

▶ To create a concurrent design

Ref: The defining characteristics for the Taguchi approach include:

- Design a robust product
- Insensitive to environmental factors either in manufacturing or in use.
- Central feature is Parameter Design. **(Handouts Page No. 52)**

Question No: 29 (Marks: 1) - Please choose one

The disadvantages of specialization to management include all of the following EXCEPT:

▶ More absenteeism

▶ Minimum responsibility

▶ More turnover

▶ **More difficult to teach the job**

Ref: [http://highered.mcgraw-](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html)

[hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html) **(See the Question No. 06)**

Question No: 30 (Marks: 1) - Please choose one

Technology has impacted the work place by:

▶ Adding to the existing geographical barriers for recruiting

▶ Increasing the cost of telecommuting

▶ Increasing the amount required to be spent on training

▶ **Unifying the workforce to a common skill level**

Ref: [http://highered.mcgraw-](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html)

[hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html) **(See the Question No. 10)**

Question No: 31 (Marks: 1) - Please choose one

Which one of the following refers to a team having representatives from different functional areas of the organization?

▶ Traditional work group

▶ Self-directed team

▶ **Cross-functional team**

▶ Self motivated team

Ref: While having representatives from different functions as team members is predicted to facilitate communication with non-team members from those functions, this structure may also create internal conflicts.

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<http://docs.google.com/viewer?a=v&q=cache:CpKetaj5A98J:dspace.mit.edu/bitstream/handle/1721.1/2310/SWP-3179-22870423.pdf%3Fsequence%3D1+team+having+representatives+from+different+functional+areas+of+the+organization&hl=en&gl=pk&pid=bl&srcid=ADGEESiZz0JtbazwsFj3WOxuhpTDJ3LMgStdq5o3KAjjil6-ogLEsA07go0PRGGxnd9tFSN1EyQmfkxsF36ST6PakVPq8W0sFVgyN0kKutPRmM5vpEAOtjjM1eJkQDDCvaG0-o0P0BC5&sig=AHIEtbQPvW7bHUJDdOn5ZCFS7AOy6L3gTA>

Question No: 32 (Marks: 1) - Please choose one

Which one of the following is NOT a business application of forecasting?

- ▶ Budgeting
- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Quality control**

Ref: Forecasting in business forms the basis for budgeting and planning for capacity, sales, production, inventory, manpower, purchasing and more. **(Handouts Page No. 31)**

Question No: 33 (Marks: 1) - Please choose one

Which one of the following factors makes a forecast LESS perfect?

- ▶ **Randomness**
- ▶ Non serious attitude
- ▶ Non availability of data
- ▶ Un qualified personnel

Ref: Forecasts rarely perfect because of RANDOMNESS (having no specific pattern). Allowances should be made for inaccuracies. **(Handouts Page No. 33)**

Question No: 34 (Marks: 1) - Please choose one

Which one of the following is an example of community factors that affect location decisions?

- ▶ Transportation
- ▶ **Quality of life**
- ▶ Location of new markets
- ▶ Location of raw materials

Ref: Community Considerations

- Quality of life
- Services
- Attitudes
- Taxes
- Environmental regulations
- Utilities
- Developer support

(Handouts Page No. 96)

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Question No: 35 (Marks: 1) - Please choose one

Which one of the following location strategies is favored by automobile manufacturers?

- ▶ Product plant strategy
- ▶ **Process plant strategy**
- ▶ Market area plant strategy
- ▶ Cost conservation strategy

Ref: Process plant strategy

- Different plants focus on different aspects of a process
- Automobile manufacturers – engine plant, body stamping plant, etc.
- Coordination across the system becomes a significant issue

http://docs.google.com/viewer?a=v&q=cache:qdhYzLa-nO8J:www.freepts.net/get.php%3Ffid%3D64857+Process+plant+strategy+Different+plants+focus+on+different+aspects+of+a+process+Automobile+manufacturers+%E2%80%93+engine+plant,+body+stamping+plant,+etc.+Coordination+across+the+system+becomes+a+significant+issue&hl=en&gl=pk&pid=bl&srcid=ADGEEShw0DYERJZV-LnWXAaw1GkOVioFaB_41KpymjwP1um272Ifa2KvJdSWt_N7o9bM2NI2TK6BEfr7A6ZsnpbJnAzfJf_fQY3sBt0NHfO-DSI2wk880ruuZz6SqW8D8IOvN7ldYz5zr&sig=AHIEtbRh75YYaIVB4ltVMN7Yz0WjxBemRQ

Question No: 36 (Marks: 1) - Please choose one

Which one the following is an assumption of center of gravity method?

- ▶ The quantity to be shipped is variable
- ▶ **The quantity to be shipped is fixed**
- ▶ The quantity carries no value
- ▶ The quantity to be shipped should be extraordinarily high

Ref:

http://books.google.com.pk/books?id=AbFUpMcYPZUC&pg=PA160&lpg=PA160&dq=center+of+gravity+method+quantity+to+be+shipped+is+fixed&source=bl&ots=D0NnQmf8Ds&sig=LOP6V_PWiWa9CxYDLBx3CAOqxM8&hl=en&ei=TzO0TfngAoKr8APpj4iWDA&sa=X&oi=book_result&ct=result&resnum=3&ved=0CCIQ6AEwAg#v=onepage&q=center%20of%20gravity%20method%20quantity%20to%20be%20shipped%20is%20fixed&f=false

Question No: 37 (Marks: 1) - Please choose one

Which of the following statements would generally be considered as correct job shop?

- ▶ A continuous process has lower output volume as compared to job shop
- ▶ Equipment flexibility is lower in job shop than that of a continuous process
- ▶ **Labor costs are higher in a Job Shop operation than in most other processes**
- ▶ Batch processing produces a more standard range of products than continuous flow processes

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Question No: 38 (Marks: 1) - Please choose one

Which one of the following is NOT an input in the transformation process?

- ▶ Information
- ▶ Services
- ▶ **Facilities**
- ▶ Materials

Ref: Inputs include materials, inventory, services, and land, and energy, human and capital resources. (Handouts Page No. 02)

ALSO SEE THIS LINK FOR FURTHER EXPLANATION:

<http://www.jpcmediallc.com/acrobat/managment.pdf>

Question No: 39 (Marks: 1) - Please choose one

Which one of the following describes the Naïve forecast?

- ▶ Attempt to predict the future value based on the past data.
- ▶ Determine long term upward or downward movement in data.
- ▶ **Forecast for any period equals the previous period's actual value.**
- ▶ Collect outside opinion of consumer and potential customers.

Ref: http://books.google.com.pk/books?id=8JM6wU_sBc0C&pg=PA145&lpg=PA145&dq=Na%C3%AFve+forecast+Forecast+for+any+period+equals+the+previous+period%E2%80%99s+actual+value&source=bl&ots=pZp4q8Kc8Q&sig=eBPVKOqJfUTmo-9Z-qAZtCRtY1I&hl=en&ei=IEW0Tb_yIciY8QPSyISWDA&sa=X&oi=book_result&ct=result&resnum=4&ved=0CCIQ6AEwAw#v=onepage&q&f=false.

Question No: 40 (Marks: 1) - Please choose one

Which one of the following is an advantage of a moving average forecast?

- ▶ All the values in the average are weighted equally.
- ▶ The method is reliable to forecast the demand accurately
- ▶ **The method is easy to compute and easy to understand**
- ▶ The most recent values are given the more weightage

Ref: Advantages of Moving Average Method

- Easily understood
- Easily computed
- Provides stable forecasts

http://docs.google.com/viewer?a=v&q=cache:wdnWQylxOkAJ:www.d.umn.edu/~rlindek1/POM/assets/IE3265_Forecasting.ppt+advantage+of+a+moving+average+forecast&hl=en&gl=pk&pid=bl&srcid=ADGEEShZWWuvuyYw3Thz0ywlMM_XmAjhWxa6y4_LN7PGbT0-xCjPa35T90GFnDvpcD_7xZ1wkiBOTsXkZA2ZfN1Rd0P250U9qN4pxWwnzD-KXlg3KxH2E5rrMrYEBizLt0onkUu4mgYP&sig=AHIEtbT3x_6N1LZaW2zQxpF7dpCl59PxTA

Question No: 41 (Marks: 5)

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Why some multinational corporations feel that globalization is not a good option?

The western worlds call these the disadvantages of Globalization, if an organization decides to pack up its business and leave a host company.

Disadvantages to Globalization

The common disadvantages which lead to a MNC forgoing globalization includes.

- Handing over proprietary Technology to host countries.
- Political risks.
- Poor Employee (Managers and worker) skills.
- Slow customer response time.
- Effective communication between interfaces difficult

Managing Global Operations

When organizations become global they often end up paying a heavy price in terms of managing complex managerial issues and challenges.

- Host country languages
- Host Country Norms and Customs.
- Workforce management
- Unfamiliar laws and regulations.
- Unexpected Cost mix.

Question No: 42 (Marks: 5)

Do you perceive that operation management and operation research are the same concepts?

NO both concepts are different from each other; we can elaborate both in the following manner:

Operation Management:

Operations management is an area of management concerned with overseeing, designing, and redesigning business operations in the production of goods and/or services. It involves the responsibility of ensuring that business operations are efficient in terms of using as little resources as needed, and effective in terms of meeting customer requirements. It is concerned with managing the process that converts inputs (in the forms of materials, labor, and energy) into outputs (in the form of goods and/or services). The relationship of operations management to senior management in commercial contexts can be compared to the relationship of line officers to the highest-level senior officers in military science. The highest-level officers shape the strategy and revise it over time, while the line officers make tactical decisions in support of carrying out the strategy.

Operation Research:

Operations research (also referred to as decision science or management science) is an interdisciplinary mathematical science that focuses on the effective use of technology by organizations. In contrast, many other science & engineering disciplines focus on technology giving secondary considerations to its use.

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Employing techniques from other mathematical sciences — such as mathematical modeling, statistical analysis, and mathematical optimization — operations research arrives at optimal or near-optimal solutions to complex decision-making problems. Because of its emphasis on human-technology interaction and because of its focus on practical applications, operations research has overlap with other disciplines, notably industrial engineering and management science, and draws on psychology and organization science. Operations Research is often concerned with determining the maximum (of profit, performance, or yield) or minimum (of loss, risk, or cost) of some real-world objective.

Paper No. 02

MIDTERM EXAMINATION

Spring 2010

MGT613- Production / Operations Management

Solved By Honey G <abduhaiee2004@gmail.com>

Time: 60 min

Marks: 44

Question No: 1 (Marks: 1) - Please choose one

Within the operations function, which one of the following is a long-term management decision?

- ▶ Control decision
- ▶ Non-operational decision
- ▶ **Strategic decision**
- ▶ Tactical decision

Ref: Strategic Importance

1. Long term commitment/costs
2. Impact on investments, revenues, and operations
3. Supply chains **(Handouts Page No. 95)**

Question No: 2 (Marks: 1) - Please choose one

The management of systems or processes that creates goods and provides services is known as:

- ▶ **Operation Management**
- ▶ Operation/production Management

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- ▶ Operation/Research Management
- ▶ Production/Research Management

Ref: Hence, operations management is the management of systems or processes that create goods and/or provide services. http://highered.mcgraw-hill.com/sites/0073041912/student_view0/ebook/chapter1/chbody1/introduction.html

Question No: 3 (Marks: 1) - Please choose one

Which of the following is **NOT** a decision to be made by operations managers?

- ▶ How much capacity is required to balance demand?
- ▶ What should be the location and layout of a facility?
- ▶ How to improve operational efficiency?
- ▶ **Which market areas to manufacture the products for?**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4471/1144826.cw/index.htm
(See the Question No. 08)

Question No: 4 (Marks: 1) - Please choose one

A business process is a logical set of tasks or activities that:

- ▶ Are specific to the operations function
- ▶ Are specific to the marketing function
- ▶ **Are interdependent with other processes**
- ▶ Have exactly the same performance measures for any process

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter5/multiple_choice_quiz.html **(See the Question No. 05)**

Question No: 5 (Marks: 1) - Please choose one

Which one the following formula or function can be used to measure the performance?

- ▶ Flexibility + profit + operations
- ▶ Work + profit + value
- ▶ **Quality + speed + flexibility**
- ▶ Profit + Incentives + standards

Ref: $\text{Value} = \text{Performance} / \text{Cost} = (\text{Quality} + \text{Speed} + \text{Flexibility}) / \text{Cost}$
(Handouts page No. 10)

Question No: 6 (Marks: 1) - Please choose one

Which of the following statements describes an order-qualifier characteristic?

- ▶ A competitive dimension used to make final decision among competitors
- ▶ A factor which directly and significantly contribute to winning business
- ▶ A factor which increases the profitability of the organization
- ▶ **A factor perceived as a minimum standard as a potential for purchase**

Ref: Order qualifiers are those significant characteristics that service customers perceive as minimum standards of acceptability to be considered as a potential

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purchase while order winners (**Handouts Page No. 15**)

Question No: 7 (Marks: 1) - Please choose one

Which one of the following forecasting techniques uses explanatory variables to predict future demand?

▶ **Associative forecast**

- ▶ Time series forecast
- ▶ Consumer survey
- ▶ Executive opinion

Ref: Associative Models: forecasting technique that uses explanatory variables to predict future demand. <http://cramberry.net/sets/26728-operational-management-3>

Question No: 8 (Marks: 1) - Please choose one

In which one of the following decision environments it is impossible to assess the likelihood of various future events?

- ▶ Risk
- ▶ Bounded rationality
- ▶ Certainty

▶ **Uncertainty**

Ref: Uncertainty: environments it is impossible to assess the likelihood of various future events. <http://nrmt.files.wordpress.com/2011/04/15-decision-making-strategies.pdf>

Question No: 9 (Marks: 1) - Please choose one

Which one of the following is an implication of LAPLACE approach of decision making?

- ▶ The best of the worst possible payoff
- ▶ The best possible payoff
- ▶ **The best average payoff**
- ▶ The least of the worst regrets

Ref: Laplace, the best payoff of the average for each alternative. (**Handouts Page No. 27**)

Question No: 10 (Marks: 1) - Please choose one

Which one of the following is an outcome of MINIMAX regret?

- ▶ The best of the worst possible payoff
- ▶ The best possible payoff
- ▶ The best average payoff

▶ **The least of the worst regret**

Ref: Minimax Regret: Determines the worst regret for each alternative (**Handouts Page No. 27**)

Question No: 11 (Marks: 1) - Please choose one

Which one of the following is a limitation of a moving average having a trend?

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► **The forecast lags behind the actual**

- The forecast represents demand more accurately
- The forecast will not be accurate
- The forecast will not be reliable

Ref: If, over several periods, a time series shows a change in the average value which corresponds to the trend model, the forecast values always lag behind the actual values by one or several periods in the first-order exponential smoothing procedure.
http://help.sap.com/saphelp_45b/helpdata/en/a5/6320e843a211d189410000e829fbbd/content.htm

Question No: 12 (Marks: 1) - Please choose one

Which one of the following refers to the maximum output that a firm can produce under ideal conditions?

► **Design capacity**

- Effective capacity
- Capacity planning
- Utilization rate

Ref: Design capacity is the maximum output rate or service capacity an operation, process, or facility. (Handouts Page No. 66)

Question No: 13 (Marks: 1) - Please choose one

Which one of the following is a characteristic of continuous process?

- High lead times
- Short process times
- The ability to handle high variety
- **The ability to handle high volumes**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4472/1144864.cw/index.htm
(In Multiple Choice Questions See the Question No. 11)

Question No: 14 (Marks: 1) - Please choose one

Which of the following is an example of a business that uses assembly line process structure?

► **Automobile assembly**

- Sugar refinery
- Heavy equipment
- French restaurants

Ref: A good example of an assembly line is an automobile plant.
<http://www.netmba.com/operations/process/structure/>

Question No: 15 (Marks: 1) - Please choose one

Which of the following layout types is associated with a supermarket?

- Fixed position layout

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► **Process layout**

- Product layout
- Cellular layout

Ref: Supermarket layouts are essentially process layouts,

http://docs.google.com/viewer?a=v&q=cache:ISjqXnqJinsJ:hkilter.com/courses/541/isl541_06.ppt+Which+of+the+following+layout+types+is+associated+with+a+supermarket%3F+%E2%96%BAFixed+position+layout+%E2%96%BAProcess+layout+%E2%96%BAProduct+layout+%E2%96%BACellular+layout&hl=en&gl=pk&pid=bl&srcid=ADGEESgjL0-us6bizOKeoG1FGkiYM86aIVo2pXsLNVhz2QCo4kalE27S2tQ6SGYrSzkeJHrBPIQd8zLHJm81nlwYCUNOvk8tSFyigfDzc4g8VsRZepfWBN0HTMjj8J8Fghtf50D4L0VW&sig=AHIEtbTxrTJMUmkozSV9o2BjZrPMqDx2HQ

Question No: 16 (Marks: 1) - Please choose one

Which one of the following layout types is associated with car assembly?

- Fixed position layout
- Process layout
- **Product layout**
- Hybrid layout

Ref: Product – Layout should suit to the nature of product and its method of production. I.e. aircraft manufacturing and car manufacturing layouts will be different. Sales also affect the layout. <http://www.scribd.com/doc/7369836/Facility-Layout>

Question No: 17 (Marks: 1) - Please choose one

A department store discovered that in a four-month period, the best forecast can be determined by using 50 percent of the sales for the most recent month, 20 percent of the sales of two months ago, 10 percent of the sales of three months ago, and 20 percent of the sales of four months ago. Which forecasting method should the store use to forecast demand?

- Simple Moving Average
- Linear Regression
- Time Series Analysis
- **Weighted Moving Average**

Ref: Weighted Moving Average

Whereas the simple moving average gives equal weight to each component of the moving average database, a weighted moving average allows any weights to be placed on each element, providing, of course, that the sum of all weights equals 1. **For example**, a department store may find that in a four-month period, the best forecast is derived by using 40 percent of the actual sales for the most recent month, 30 percent of two months ago, 20 percent of three months ago, and 10 percent of four months ago.

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+A+department+store+discovered+that+in+a+four-

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month+period,+the+best+forecast+can+be+determined+by+using+50+percent+of+the+s
ales+for+the+most+recent+month,+20+percent+of+the+sales+of+two+months+ago,+10
+percent+of+the+sales+of+three+months+ago,+and+20+percent+of+the+sales+of+four+
months+ago.+Which+forecasting+method+should+the+store+use+to+forecast+demand
%3F+%E2%96%BA+Simple+Moving+Average+%E2%96%BA+Linear+Regression+%
E2%96%BA+Time+Series+Analysis+%E2%96%BA+Weighted+Moving+Average&hl=
en&gl=pk&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMlzbF5wpl0nxI
gJ8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-
BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEt
bR6QAx5fG8CQkeTPpk7SBvpbuEl1A

Question No: 18 (Marks: 1) - Please choose one

Which one of the following is an application of simple exponential smoothing?

- ▶ Establishing durability
- ▶ Finding reliability
- ▶ **Scheduling services**
- ▶ Quality improvement

Question No: 19 (Marks: 1) - Please choose one

Which of the following takes into consideration the design of aesthetics of the product?

- ▶ Functional design
- ▶ Production design
- ▶ Service design
- ▶ **Product design**

Ref: Product design (i.e., industrial design) is perhaps most associated with aesthetic considerations <http://www.acrwebsite.org/volumes/display.asp?id=7824>

Question No: 20 (Marks: 1) - Please choose one

Which one of the following statements is TRUE about product life cycle?

- ▶ It depicts demand of a product at various price levels
- ▶ **It depicts demand of a product with respect to time**
- ▶ It relates demand of a product to quality
- ▶ It relates demand of a product to market share

Ref: (See the handouts Page No.50 Diagrammed)

Question No: 21 (Marks: 1) - Please choose one

Which one of the following is TRUE about Taguchi approach?

- ▶ **To test the robustness of a design**
- ▶ To articulate the “voice of the customer”
- ▶ To reduce the degree of automation
- ▶ To create a concurrent design

Ref: The defining characteristics for the Taguchi approach include:

- Design a robust product

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- Insensitive to environmental factors either in manufacturing or in use.
- Central feature is Parameter Design. (Handouts Page No. 52)

Question No: 22 (Marks: 1) - Please choose one

Which one of the following is a curve showing failure rate over time?

- ▶ Cost curve
- ▶ **Bath tub curve**
- ▶ Fish bone diagram
- ▶ Reliability curve

Ref: The figure above shows a bathtub shape and thus rightly is referred to as the Bathtub curve. On the Y axis we represent the Failure rate and on the X axis we represent the Time. (Handouts Page No. 60)

Question No: 23 (Marks: 1) - Please choose one

Which of following statement is **true** about effective capacity?

- ▶ It is the actual output achieved
- ▶ It is always less than actual output
- ▶ It is the maximum output that a firm can produce.
- ▶ **It is always less than designed capacity**

Ref:

http://books.google.com.pk/books?id=wUHzc8JtZzUC&pg=PA249&dq=effective+capacity+It+is+the+actual+output+achieved&hl=en&ei=4WV3TfycOIio8AP885jPCw&sa=X&oi=book_result&ct=result&resnum=1&sqi=2&ved=0CCcQ6AEwAA#v=onepage&q=effective%20capacity%20It%20is%20the%20actual%20output%20achieved&f=false

(Read the 3rd Paragraph)

Question No: 24 (Marks: 1) - Please choose one

Which one of the following is used to produce gasoline and petroleum products?

- ▶ Job shop
- ▶ Batch processing
- ▶ Assembly line
- ▶ **Continuous processing**

Ref: http://highered.mcgraw-hill.com/sites/0073403296/student_view0/chapter7/multiple_choice_quiz.html (See the Question No. 02)

Question No: 25 (Marks: 1) - Please choose one

Quality, costs, lead times, operating resources are all related to which one of the following strategies.

- ▶ Organizational strategy
- ▶ Financial strategy
- ▶ **Operational strategy**
- ▶ Tactical strategy

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Ref: OPERATIONS STRATEGY: (Deals with the operations aspect of an organization). OS is related to products, processes, methods, operating resources, quality, costs, lead times, and scheduling.

http://docs.google.com/viewer?a=v&q=cache:Z8OTKodTI24J:bulatov.org.ua/teaching_courses/nam_operations/L2%2520PRODUCTIVITY,%2520COMPETITIVENESS,%2520STRATEGY.doc+Quality,+costs,+lead+times,+operating+resources+are+all+related+to+Operational+strategy&hl=en&pid=bl&srcid=ADGEESjFppdZdPqJCYGeE5eZ0lbXSbBIaQuAZHRq8WGSAb060LQFyePsZ7uLK3tBxikelBwidDvqI2uehI7dlnTODYpZMU2xVYk6oWk7IHpLh4hW3Brot6pOUAe-f0XbM42tJV6kLRzg&sig=AHIEtbTIW5C5SYPMtZqjIHd9wX_vuoJE6g

Question No: 26 (Marks: 1) - Please choose one

Which one of the following refers to bringing together engineering design and manufacturing personnel early in the design phase?

- ▶ Reverse engineering
- ▶ **Concurrent engineering**
- ▶ Manufacturability
- ▶ Serviceability

Ref: Concurrent engineering is the bringing together of engineering design and manufacturing personnel early in the design phase. (Handouts page no. 53)

Question No: 27 (Marks: 1) - Please choose one

Which of the following refers to the way an organization chooses to produce its goods or services?

- ▶ **Process selection**
- ▶ Process reengineering
- ▶ Process redesign
- ▶ Process design

Ref: Process Selection refers to the way an organization chooses to produce its good or services. (Handouts Page No. 77)

Question No: 28 (Marks: 1) - Please choose one

Which one of the following is the first step in line balancing?

- ▶ **Specify the sequential relationship among tasks**
- ▶ Determine the required cycle time.
- ▶ Determine the minimum number of workstations.
- ▶ Determine the desired output

Ref: http://www.slidefinder.net/c/chapter_manufacturing_processes/25822455
(See the Slide No. 13)

Question No: 29 (Marks: 3)

Write down at least three ways of improving reliability of a system.

We should develop the ability to understand the importance of reliability and at

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the same time identify the ways in which Reliability can be improved in the following generic ways.

1. Component design: Parts of a car
2. Production/assembly techniques: No reworks also fool proof assembly.
3. Testing: for trouble free final product
4. Redundancy/backups: not possible all the time but common remedy.
5. Preventive maintenance procedures
6. User education (operating manuals)
7. System design (we will discuss in later chapters, a senior management issue, but indicative that reliability is always considered VIP)
8. Research & Development (R&D) : Organized efforts to increase scientific knowledge or product innovation & may involve:

Question No: 30 (Marks: 3)

What qualities does a successful job design contain?

A successful Job Design must have the following qualities

1. Carried out by experienced personnel who have the necessary training and background.
2. Consistent with the goals of the organization.
3. in documented form.
4. Understood and agreed by both management and employees.
5. Shared with the new employees.
6. Factors that affect Job Design

Question No: 31 (Marks: 5)

Suppose you are the operations manager of ABC Corporation. To develop competence in business operations, you have to decide either to rely on the facilities available in-house or outsource. What are some of the factors you would base the decision on?

Reasons to (Produce in-House or Outsource) Make or Buy

There are 6 reasons which are available to us in order to decide whether to develop a competence in house or hire an outside competent organization to supply that product, service or particular expertise. The latter requires that the outsourcer to be honest, ethical, competent. It also requires that outsourcing contract should be flexible yet pragmatic and carry proper levels of services.

- Available capacity if an organization has the equipment, necessary skills and time, it often makes sense to produce an item or perform a service in house. The additional costs would be relatively small compared with those required to buy items or subcontract them.
- Expertise. If a firm lacks the expertise to do a job satisfactorily, buying might be a reasonable alternative.
- Quality considerations. Firms that specialize can usually offer higher quality than an organization can attain itself. Conversely, special quality

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requirements or the ability to closely monitor quality may cause an organization to perform a job itself.

- Nature of demand. When demand for an item is high and steady, the organization is often better off doing the work itself. However, wide fluctuations in demand or small orders are usually better handled by specialists, who are able to combine orders from multiple sources, which results in higher volume and tend to offset individual buyer fluctuation.
- Cost. Any cost savings achieved from buying or making must be weighed against the preceding factors. Cost savings might come from the item itself or from transportation cost savings. If there are fixed costs associated with making an item that cannot be reallocated if the item is purchased, that has to be recognized in cost analysis.
- Risk. Outsourcing or buying the services carries risk; often companies retain flexibility by carrying out certain critical activities in house and repetitive menial activities through outsourcing.

Question No: 32 (Marks: 5)

“Standardization plays an important role in product design”. How will you describe this role?

Standardization is the extent to which there is an absence of variety in a product, service or process. Standardized products are immediately available to customers. You go to a market and request for a charger for your cellular phone, the shopkeeper would ask for the model, make and deliver you as special product which is made by your cell phone company or by an independent manufacturer, who provides a standardized compatible model.

Paper No. 03

MIDTERM EXAMINATION Spring 2010

MGT613- Production and operation management (Session - 3)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per shift?

- ▶ Capital
- ▶ Energy
- ▶ **Labor**
- ▶ Machine

Ref: Labor Productivity

- Units of output per labor hour
- Units of output per shift

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- Value-added per labor hour (Handouts Page No. 19)

Question No: 2 (Marks: 1) - Please choose one

All of the following are the decision areas of an operations manager EXCEPT:

- ▶ Inventory management
- ▶ Scheduling tasks
- ▶ Supply chain management
- ▶ **Financial reporting**

Ref: Major operations decisions areas include inventory, capacity, quality, scheduling, process type, technology, location, layout, and supply chain management.
<http://en.allexperts.com/q/Management-Consulting-2802/2011/2/Production-Operations-Management-1.htm>

Question No: 3 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute value?

- ▶ (Quality + Speed – Flexibility) / Cost
- ▶ **(Quality + Speed+ Flexibility) / Cost**
- ▶ (Quality + Speed - Cost) / Flexibility
- ▶ (Quality + Speed+ Cost) / Flexibility

Ref: Value= Performance/Cost= (Quality +Speed+ Flexibility)/Cost
(Handouts page No. 10)

Question No: 4 (Marks: 1) - Please choose one

Which of the following refers to the essential elements of operations strategy?

- ▶ Policies, tactics and objectives
- ▶ Plans, strategies and vision
- ▶ Mission, goals and plans
- ▶ **Mission, policies and distinctive competencies**

Question No: 5 (Marks: 1) - Please choose one

As a manager, you have defined the purpose of the forecasts. What should be the next step in forecasting process?

- ▶ Choose a forecasting technique.
- ▶ Determine the purpose of the forecast.
- ▶ **Set up a time horizon or a time limit.**
- ▶ Collect and analyze the appropriate data.

Ref: Steps in the Forecasting Process:

- **Determine the purpose of the forecast:** meaning what is the purpose and when will it be required. This will provide the level of detail for resources required man, machine, time and capital.
- **Establish a time horizon:** We already know that as time increases the accuracy of the Forecast decreases.
- **Select a forecasting technique:** whether qualitative or quantitative

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- **Gather and analyze the appropriate data:** It goes without saying that before a forecast can be delivered data is required. The closer the real life data more realistic would be the forecast. This may be the time when you would like to identify the important assumptions and suppositions.
- **Prepare the forecast:**
- **Monitor the forecast:** A forecast has to be closely monitored to determine whether it is fulfilling its basic purpose. This helps in re-examining the method, assumptions and validity of the data and preparing a revised forecast.

Question No: 6 (Marks: 1) - Please choose one

Which one of the following forecasting techniques is used to identify a trend when data is neither growing nor declining rapidly and has no seasonal characteristics?

- ▶ **Simple moving average**
- ▶ Delphi method
- ▶ Trend adjusted forecast
- ▶ Naïve forecast

Ref: The Moving Average model takes the average of several periods of data; the result is a dampened or smoothed data set; use this model when demand is stable and there is no evidence of a trend or seasonal pattern. <http://www.shmula.com/forecasting-unweighted-and-weighted-moving-average-model/308/>

Question No: 7 (Marks: 1) - Please choose one

Which one of the following mathematical expressions is used to compute utilization?

- ▶ Actual output / effective capacity
- ▶ **Actual output / design capacity**
- ▶ Actual output + effective capacity
- ▶ Actual output / design capacity

Ref: For example:

Actual Output = 36 units / day

Design Capacity = 50 units / day

Utilization = $36/50 * 100 = 72\%$ (Handouts Page No. 66)

Question No: 8 (Marks: 1) - Please choose one

Effective capacity is influenced by all of the following factors EXCEPT:

- ▶ Facilities
- ▶ **Product mix**
- ▶ Processes
- ▶ Operations

Ref: There are 7 determinants of effective capacity namely:

- Facilities.
- Product and service factors
- Process factors

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- Human factors
- Operational factors
- Supply chain factors
- External factors

(Handouts Page No. 66 and 67)

Question No: 9 (Marks: 1) - Please choose one

Which one of the following is concerned with short term capacity needs?

- ▶ Cycle
- ▶ Trends
- ▶ **Seasonality**
- ▶ Average

Ref: Long term capacity decisions relate to overall level of capacity while short term capacity decisions refer to seasonal, random or irregular variations in demand.
(Handouts Page No. 76)

Question No: 10 (Marks: 1) - Please choose one

Which of the following statements is correct about capacity evaluating alternatives?

- ▶ **Minimum cost and optimal operating rate are functions of size of plant.**
- ▶ Minimum cost and optimal operating rate are functions of fixed cost.
- ▶ Minimum cost and productivity are functions of size of plant.
- ▶ Maximum cost and optimal operating rate are functions of size of plant.

Ref: Evaluating Alternatives

- As the general capacity of the plant increases, the optimal output rate increases and the minimum cost for the optimal rate decreases.
- This is the prime reason why larger plants tend to have higher optimal output rates and lower minimum costs than smaller plants. (Handouts page No. 69)

Question No: 11 (Marks: 1) - Please choose one

Which of the following is an example of a business that uses assembly line process structure?

- ▶ **Automobile assembly**
- ▶ Sugar refinery
- ▶ Heavy equipment
- ▶ French restaurants

Ref: A good example of an assembly line is an automobile plant.

<http://www.netmba.com/operations/process/structure/>

Question No: 12 (Marks: 1) - Please choose one

Which of the following layout types is associated with a supermarket?

- ▶ Fixed position layout
- ▶ **Process layout**
- ▶ Product layout
- ▶ Cellular layout

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Ref: Supermarket layouts are essentially process layouts,

http://docs.google.com/viewer?a=v&q=cache:ISjqXnqJinsJ:hkilter.com/courses/541/isl541_06.ppt+Which+of+the+following+layout+types+is+associated+with+a+supermarket%3F+%E2%96%BAFixed+position+layout+%E2%96%BAProcess+layout+%E2%96%BAProduct+layout+%E2%96%BACellular+layout&hl=en&gl=pk&pid=bl&srcid=ADGEESgjL0-us6bizOKeoG1FGkiYM86aIVo2pXsLNVhz2QCo4kalE27S2tQ6SGYrSzkeJHrBPIQd8zLHJm81nlwYCUNOvk8tSFyigfDzc4g8VsRZepfWBN0HTMjj8J8Fghtf50D4L0VW&sig=AHIEtbTxrTJMUmkozSV9o2BjZrPMqDx2HQ

Question No: 13 (Marks: 1) - Please choose one

Which one of the following defines the range of the smoothing constant (Alpha)?

- ▶ 2 and -2
- ▶ 1 and -1
- ▶ 0 and -1
- ▶ **0 and 1**

Ref: alpha - the smoothing constant to use for this exponential smoothing model. Must be a value in the range 0.0 - 1.0 Values above 0.5 is uncommon - though they are still valid and are supported by this implementation.

<http://openforecast.sourceforge.net/docs/net/sourceforge/openforecast/models/TripleExponentialSmoothingModel.html>

Question No: 14 (Marks: 1) - Please choose one

Which method of forecasting is most widely used?

- ▶ Regression analysis
- ▶ Adaptive forecasting
- ▶ Weighted moving average
- ▶ **Exponential smoothing**

Ref: Exponential smoothing is a widely method used of forecasting based on the time series itself. Unlike regression models, exponential smoothing does not imposed any deterministic model to fit the series other than what is inherent in the time series itself.

<http://home.ubalt.edu/ntsbarsh/stat-data/forecast.htm>

Question No: 15 (Marks: 1) - Please choose one

Which one of the following refers to a design that takes into account organization's operational capabilities, when designing a product?

- ▶ Design for assembly
- ▶ **Design for manufacturing**
- ▶ Design for recycling
- ▶ Design for disassembly

Ref: Design for Manufacturing (DFM): The designers' consideration of the organization's manufacturing capabilities when designing a product. **(Handouts Page No. 51)**

Note: Solve these papers by yourself

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Question No: 16 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 300 hours between repairs, and the mean repair time is expected to be 2 hours?

- ▶ 6.02
- ▶ 2.0
- ▶ **0.99**
- ▶ 0.006

Ref: Availability = (MTBF) / (MTBF + MTR)

MTBF = Mean time between factor =300

MTR = Mean repair time =2 hours

Availability = (300) / (300+2)

Availability =300 / 302

Availability = 0.99

Question No: 17 (Marks: 1) - Please choose one

Which of the following management level is responsible for long-range capacity planning?

- ▶ Lower management
- ▶ Middle management
- ▶ **Top management**
- ▶ Non managerial employees

Question No: 18 (Marks: 1) - Please choose one

Which of the following is NOT an emerging trend in the workplace?

- ▶ Increasing workplace diversity
- ▶ **Decreasing work schedule flexibility**
- ▶ Increasing number of part time jobs
- ▶ Increasing use of temporary labor

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the

Question No. 09)

Question No: 19 (Marks: 1) - Please choose one

Which one of the following is NOT a business application of forecasting?

- ▶ Budgeting
- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Quality control**

Ref: Forecasting in business forms the basis for budgeting and planning for capacity, sales, production, inventory, manpower, purchasing and more. **(Handouts Page No. 31)**

Question No: 20 (Marks: 1) - Please choose one

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Which one of the following is an example of site related factors that affect location decision?

- ▶ **Transportation**
- ▶ Quality of life
- ▶ Location of new markets
- ▶ Location of raw materials

Ref: Site Related Factors

- Land
- Transportation
- Environmental
- Legal (Handouts Page No. 96)

Question No: 21 (Marks: 1) - Please choose one

Which one of the following is TRUE about work sampling?

- ▶ It describes individual human motions that are used in a job task
- ▶ It involves determining the length of time it will take to undertake a particular task
- ▶ **It involves determining the amount of time a worker spends on various activities**
- ▶ It provides standard times for micro motions such as reach, move and release

Ref: Work Sampling is the statistical technique for determining the proportion of time spent by workers in various defined categories of activity.

http://en.wikipedia.org/wiki/Work_sampling#cite_note-Groover-0

Question No: 22 (Marks: 1) - Please choose one

Services differ from manufacturing in all the following ways EXCEPT:

- ▶ Customers typically interact directly with the service delivery process.
- ▶ Consumption and production take place simultaneously.
- ▶ Services are intangible.
- ▶ **Services can be stored**

Ref: service operations are different from manufacturing operations in terms of

- Tangible and intangible output
- customer consumption
- use of labor and equipment
- customer contact
- customer participation in conversion process
- measuring activities and resources

http://wiki.answers.com/Q/How_do_service_operations_differ_from_manufacturing_operations

Question No: 23 (Marks: 1) - Please choose one

Which of the following is **NOT** an attribute to classify services?

- ▶ **Tangibility**

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- ▶ Perishability
- ▶ Simultaneity
- ▶ Courtesy

Ref: Services are all intangible. For example cleaning something or delivering a pizza they are services they don't produce anything.

<http://answers.yahoo.com/question/index?qid=20090320204146AAIPtZT>

Question No: 24 (Marks: 1) - Please choose one

Organizational strategies relate to which of the following sets of factors?

- ▶ **Survival, profitability, growth rate and market share**
- ▶ Profitability, survival, lead times and target market
- ▶ Quality, operating resources, growth rate and market share
- ▶ Scheduling, profitability, lead times and survival

Ref: Survival, profitability, Growth rate, market share (**Book Page/Slide No. 13**)

http://docs.google.com/viewer?a=v&q=cache:bYWPs-Ig99IJ:highered.mcgraw-hill.com/sites/dl/free/0073525251/886181/stevenson11e_sample_ch02.pdf+Organizational+strategies+relate+to+which+of+the+following+sets+of+factors?+%E2%96%BA+Survival,+profitability,+growth+rate+and+market+share+%E2%96%BAProfitability,+survival,+leads+times+and+target+market+%E2%96%BAQuality,+operating+resources,+growth+rate+and+market+share+%E2%96%BAScheduling,+profitability,+lead+times+and+survival&hl=en&gl=pk&pid=bl&srcid=ADGEEShIkJnaEXjh-LIA3HACWDXOFhSy4GxPv8YQXZJIU3WT0go2Jj8vnbbzyuq3hxydg1DjvPnqXn6l7_WK80EPHn15OYu_iNw-luxMf0zGIxME7Z2JTjx1YPoSJERrLKF0cWbvkXb&sig=AHIEtbRBvXb8MDQZrhUT8qmH-CP_4ToLlw&pli=1

Question No: 25 (Marks: 1) - Please choose one

The purpose of _____ is to coordinate and control all the required sources so that productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control
- ▶ **Demand management**
- ▶ Forecasting
- ▶ Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvgP9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=true

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Question No: 26 (Marks: 1) - Please choose one

Which one of the following forecasting methods uses subjective inputs such as opinions from consumer surveys, sales staff, managers and experts?

- ▶ Time series model
- ▶ Least Square method
- ▶ **Judgmental forecasting model**
- ▶ Associative forecasting model

Ref: Judgmental - uses subjective inputs meaning that a judgmental forecast rely on analysis of subjective inputs obtained from various sources, such as consumer surveys, the sales staff, managers and executives, and panels of experts. These insights are not available publicly. (Handouts Page No. 35)

Question No: 27 (Marks: 1) - Please choose one

Which one of the following refers to translating the voice of the customer into technical design requirements?

- ▶ Concurrent design
- ▶ Design for manufacture
- ▶ Robust design
- ▶ **Quality function deployment**

Ref: A popular managerial view is that the Quality Function should be deployed at the source or at the design stage. We also should know what Quality Function Deployment is. Two common answers being that it is the voice of the customer (which always sets a standard for the service organization to follow) and the second one being that it should be in the form of a house of quality. (Handouts Page No. 55)

Question No: 28 (Marks: 1) - Please choose one

Which one of the following statements represents use of cost-volume analysis?

- ▶ It is a tool for reliability measurement
- ▶ It provides a base for marketing research
- ▶ **It helps in comparing capacity alternatives**
- ▶ It is important in product design

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. The primary purpose of cost volume analysis is to estimate the income of an organization under different operating conditions. It is particularly useful as a tool for comparing capacity alternatives. (Handouts Page No. 73)

Question No: 29 (Marks: 3)

What are the reasons that support the use of process layout?

1. Product layouts are used to achieve a smooth and rapid flow of large volumes of goods and customers through a system.
2. The work is divided into a series of standardized tasks, permitting specialization of both labor and equipment.
3. The large volumes handled by these systems make it pertinent and necessary to

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invest in equipment and job design.

4. Layouts should be arranged to make the best use of technological processing abilities to fulfill the requirements of both product and services.
5. In manufacturing environments the lines are referred to as production lines or assembly lines, depending on the type of activity involved.
6. In services side, the word line may or may not be used like Healthcare/Hospital Services line, Carwash (absence of word line here) or Cafeteria Line.
7. Without standardization, many of the benefits of the repetitive processing are lost.
8. Product Layouts achieve a high degree of labor and equipment utilization, which tends to offset their high equipment costs.
9. Operations are so closely tied up that a mechanical failure or high absenteeism (rains) would increase vulnerability of the Systems.
10. We can prevent breakdowns if we religiously follow preventive maintenance schedules, inspection and replacement of worn parts.

Question No: 30 (Marks: 3)

Suppose you are the operations manager of a manufacturing firm, why would you perceive concurrent engineering as a suitable approach with reference to product design?

Concurrent Engineering:

Concurrent engineering is the bringing together of engineering design and manufacturing personnel early in the design phase.

Why Suitable Approach to product Design:

- Manufacturing Personnel are able to identify production capabilities and capacities. They have thus the opportunity to inform the design group about the suitability of certain materials on the flipside the designer would know the suitability of certain designs in aiding in cost reduction and quality improvement in production/assembly process.
- Early opportunities for design or procurement of critical tooling, some of which might have long lead times. This can result in a major shortening of the product development process, which should be a key competitive advantage.
- Early consideration of the Technical Feasibility of a particular design or a portion of a design. Again this can avoid serious problems during production. The emphasis can be on problem resolution instead of conflict resolution.

Question No: 31 (Marks: 5)

Which process system would you suggest for the following business/industry?

French restaurants	(Job Shop Process)
Heavy equipment	(Batch Flow Process)
Sugar refinery	(Continuous Flow Process)
Automobile assembly	(Product layout)
Commercial printer	(Job Shop Process)

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Question No: 32 (Marks: 5)

In some organizations capacity planning takes place very regularly and in some it takes place seldom. What are the factors that influence the frequency of capacity planning?

FACTORS INFLUENCE THE FREQUENCY OF CAPACITY PLANNING:

1. Capacity strategy for long-term demand which focus on demand patterns and takes into account growth rate and variability
2. Facilities that focus on cost of building and operating
3. Technological changes relate to rate and direction of technology changes
4. Behavior of competitors
5. Availability of capital and other inputs

Paper No. 04

MIDTERM EXAMINATION

Spring 2010

MGT613- Production / Operations Management (Session - 6)

Solved By Honey G <abdulhaice2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Which one of the following decision is NOT made by operations managers?

- ▶ How much capacity is required to balance demand?
- ▶ What should be the location and layout of a facility?
- ▶ How to improve operational efficiency?
- ▶ **Which market areas to manufacture the products for?**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4471/1144826.cw/index.htm

(See the Question No. 08)

Question No: 2 (Marks: 1) - Please choose one

Which one of the following is a measure of productivity that involves measuring inputs and outputs using a common unit of measurement?

- ▶ **Multifactor**
- ▶ Partial
- ▶ Single
- ▶ Total

Ref: Calculations of multifactor productivity measure inputs and outputs using a common unit of measurement, such as cost. For instance, the measure might use cost of inputs and units of the output:

<http://docs.google.com/viewer?a=v&q=cache:bYWPs-Ig99IJ:highered.mcgraw->

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s+a+measure+of+productivity+that+involves+measuring+inputs+and+outputs+using+a+
common+unit+of+measurement&hl=en&gl=pk&pid=bl&srcid=ADGEEShIkJnaEXjh-
LIA3HACWDXOFhSy4GxPv8YQXZJIU3WT0go2JJj8vnbbzyuq3hxydg1DjvPnqXn6l7
_WK80EPHn15OYu_iNw-
luxMf0zGIxME7Z2JTjx1YPoSJERrLKF0cWbvkXb&sig=AHIEtbTWWf1ESOM052Hr
kqk5mCU24fLbQA

Question No: 3 (Marks: 1) - Please choose one

Which of the following functions of an organization consists of all activities directly related to production of a good or service?

- ▶ **Operations**
- ▶ Marketing
- ▶ Accounting
- ▶ Finance

Ref: The Operations function consists of all activities that are directly related to production of a good or service. (Handouts Page No. 7)

Question No: 4 (Marks: 1) - Please choose one

Which of the following is **NOT** a decision to be made by operations managers?

- ▶ How much capacity is required to balance demand?
- ▶ What should be the location and layout of a facility?
- ▶ How to improve operational efficiency?
- ▶ **Which market areas to manufacture the products for?**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4471/1144826.cw/index.htm
(See the Question No. 08)

Question No: 5 (Marks: 1) - Please choose one

To make operations strategy effective it should be:

- ▶ Independent of the organization's strategy
- ▶ **Consistent with the organization's strategy**
- ▶ Developed by a first line manager
- ▶ Independent of time dimension

Ref: Operations strategy – The approach, consistent with organization strategy that is used to guide the operations function. (Handouts Page No. 14)

Question No: 6 (Marks: 1) - Please choose one

Which one of the following factors provides a basis for comparing alternative forecasting techniques?

- ▶ Time dimension
- ▶ Reliability factor
- ▶ **Degree of accuracy**

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- ▶ Measuring units

Ref: Accuracy: Forecasts should be accurate. In fact it should carry the degree of accuracy, so the users are aware of the limitations of the forecast. This will also help the end users to plan for possible errors and provide a basis for comparing the forecast with other alternative forecasts **(Handouts Page No. 34)**

Question No: 7 (Marks: 1) - Please choose one

Which one of the following forecasting technique is based on historical data?

- ▶ **Time series**
- ▶ Qualitative
- ▶ Judgmental
- ▶ Associative

Ref: Time series - uses historical data assuming the future will be like the past and depend on developing relationships between variables that can be expressed to predict future values. **(Handouts page no. 35)**

Question No: 8 (Marks: 1) - Please choose one

Which one of the following involves completing a series of questionnaires each developed from the previous one, to achieve a consensus forecast?

- ▶ Consumer surveys
- ▶ Executive opinion
- ▶ Time series forecast

- ▶ **Delphi method**

Ref: Delphi method: Managers and staff complete a series of questionnaires, each developed from the previous one, to achieve a consensus forecast. **(Handouts Page No35)**

Question No: 9 (Marks: 1) - Please choose one

In which one of the following situations, the use of a decision tree is required instead of a payoff table?

- ▶ When there are more than three states of nature
- ▶ When there are more than three decision payoffs
- ▶ When the decision situation encompasses an extended time period

- ▶ **When a series of decisions is required**

Ref: However, a payoff table is usually limited to a single decision situation, as in our real estate investment example. If a decision situation requires a series of decisions, then a payoff table cannot be created, and a decision tree becomes the best method for decision analysis. <http://flylib.com/books/en/3.287.1.160/1/>

Question No: 10 (Marks: 1) - Please choose one

Which one of the following is an index used to measure actual output relative to design capacity?

- ▶ Efficiency

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- ▶ Effective capacity
- ▶ Effectiveness
- ▶ **Utilization**

Ref: It can be expressed as a ratio, where utilization = actual output divided by design capacity. This measure is used in both capacity planning and capacity requirements planning processes. <http://www.bnet.com/topics/capacity+utilization>

Question No: 11 (Marks: 1) - Please choose one

Which one of the following stages of product life cycle relates to more predictable behavior in terms of capacity requirements?

- ▶ Introduction
- ▶ Growth
- ▶ **Maturity**
- ▶ Decline

Ref: Maturity Stage. As the products of firms move into the maturity stage, attracting highly skilled individuals is no longer as high a priority. Firms in the mature stage have an extensive internal labour market and extensive training and development programs. Firms in this stage may pay high wages to retain skilled talent. Economic downturns are handled by employee layoffs. Conflict resolutions and due process under collective bargaining are the grievance procedures with third party arbitration (Kochan & Chalykoff, 1985). **The environment (customer demand and competitors) becomes more stable and predictable (but as competitive) in comparison with the growth stage.**

<http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sja cksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=en&gl=pk&pid=bl&srcid=ADGEESigJYxwqHconGqfCMjw0LjJ83rXBJuDpDj9ii07-2VUwmVTBF6K-Xm7xu1THfTijPxrsbqKJD0KKZziOIaotlvC4pPqcxwZ2J3KdX3QIQo8iw3VCTRAsg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMIRvbg>

Question No: 12 (Marks: 1) - Please choose one

Which of the following statements is correct about capacity evaluating alternatives?

- ▶ **Minimum cost and optimal operating rate are functions of size of plant.**
- ▶ Minimum cost and optimal operating rate are functions of fixed cost.
- ▶ Minimum cost and productivity are functions of size of plant.
- ▶ Maximum cost and optimal operating rate are functions of size of plant.

Ref: Evaluating Alternatives

- As the general capacity of the plant increases, the optimal output rate increases and the minimum cost for the optimal rate decreases.
- This is the prime reason why larger plants tend to have higher optimal output rates and lower minimum costs than smaller plants. **(Handouts page No. 69)**

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Question No: 13 (Marks: 1) - Please choose one

What would be the required cycle time for a process that operates 9 hours daily with a desired output of 300 units per day?

- ▶ 0.03 minutes
- ▶ **1.8 minutes**
- ▶ 2700 minutes
- ▶ 291 minutes

Ref: $CT = \text{Time Cycle} = \text{Operating Time} / \text{Desire Output}$

$CT = \text{Time Cycle} = 9 * 60 / 300 = \mathbf{1.8 \text{ minutes}}$

Question No: 14 (Marks: 1) - Please choose one

Which of the following factors are considered in product and service design?

- ▶ Customer satisfaction, quality, and improvement costs
- ▶ Employee motivation, quality, and production costs
- ▶ Customer satisfaction, flexibility, and production costs
- ▶ **Customer satisfaction, quality, and production costs**

Ref: A good product/service design can ensure customer satisfaction, quality and production costs. (Handouts Page No. 44)

Question No: 15 (Marks: 1) - Please choose one

Which one of the following mathematical expressions can be used to compute availability?

- ▶ **$(MTBF) / (MTBF + MTR)$**
- ▶ $(MTBF) / (MTBF - MTR)$
- ▶ $(MTR) / (MTBF + MTR)$
- ▶ $(MTR) / (MTBF - MTR)$

Ref: $\text{Availability} = (MTBF) / (MTBF + MTR)$ (Handouts Page No. 63)

Question No: 16 (Marks: 1) - Please choose one

The advantages of specialization to management include all of the following EXCEPT:

- ▶ Rapid training of the workforce
- ▶ Ease in recruiting new workers
- ▶ **Fewer turnovers**
- ▶ Less boredom for workers

Ref:

http://books.google.com.pk/books?id=d3eREcsD35sC&pg=PA224&lpg=PA224&dq=Advantages+of+specialization+To+management+1+Rapid+training+of+the+work+force+2.+Ease+in+recruiting+new+workers+3.+High+output+due+to+simple+and+repetitive+work&source=bl&ots=R5XoCdpdob&sig=H_j0m4evxgrOj_nOQ9b65cT3pg8&hl=en&ei=kwi3TbT0J8HU4wbq4aD_Dw&sa=X&oi=book_result&ct=result&resnum=2&ved=0CBgQ6AEwAQ#v=onepage&q&f=false

Question No: 17 (Marks: 1) - Please choose one

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Which one of the following refers to the length of time needed to complete a job?

- ▶ Work sampling methods
- ▶ **Work measurement**
- ▶ Job design
- ▶ Methods analysis

Ref: And last but not the least work measurements dealt specifically with the length of time needed to complete a job and was linked with Personnel Planning, Cost Estimation, Budgeting, Scheduling and Worker Compensation. **(Handouts Page No. 93)**

Question No: 18 (Marks: 1) - Please choose one

Which one of the following management functions is based on forecasting?

- ▶ **Planning**
- ▶ Organizing
- ▶ Leading
- ▶ Controlling

Ref: Forecasting is used in the practice of Customer Demand Planning in every day business forecasting for manufacturing companies.

<http://en.wikipedia.org/wiki/Forecasting>

Question No: 19 (Marks: 1) - Please choose one

Which one of the following is **TRUE** about the importance of capacity planning?

- ▶ It is profitable
- ▶ It increase the capacity of productive unit
- ▶ **It helps managers quantify production capability**
- ▶ It establishes good relationship with the customer

Ref: The operating unit might be a plant, department, machine, store, or worker. The capacity of an operating unit is an important piece of information for planning purposes: It enables managers to quantify production capability in terms of inputs or outputs, and thereby make other decisions or plans related to those quantities. The basic questions in capacity planning are the following:

1. What kind of capacity is needed?
2. How much is needed?
3. When is it needed?

<http://docs.google.com/viewer?a=v&q=cache:XUm6ltzkqJwJ:amaiu.pbworks.com/f/ABI>

301%2BLecture%2BNote%2B%2BNo.%2B3.doc+capacity+planning+helps+managers+quantify+production+capability&hl=en&pid=bl&srcid=ADGEESgdFdpntlZr3VP2j2fW79QGsgD51GhPtii0II2cZBZz6Na8bfUjBNDEB30R56MO7G2srDEW5gbqKE2ORdLy2rXBBcqsWedpL6ntC5Nd-Sso_COn_VnnbNA7Bgm_hGBkx-ptloKup&sig=AHIEtbS2U8M8uNEWGDLCOxGTMQfTS59NpQ

Question No: 20 (Marks: 1) - Please choose one

The type of processing structure that is used for producing discrete products at higher

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volume is:

- ▶ Continuous Flow
- ▶ **Assembly Line**
- ▶ Batch
- ▶ Job shop

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html (See the **Question No. 3**)

Question No: 21 (Marks: 1) - Please choose one

Which one of the following is TRUE about work sampling?

- ▶ It describes individual human motions that are used in a job task
- ▶ It involves determining the length of time it will take to undertake a particular task
- ▶ **It involves determining the amount of time a worker spends on various activities**
- ▶ It provides standard times for micro motions such as reach, move and release

Ref: Work Sampling is the statistical technique for determining the proportion of time spent by workers in various defined categories of activity.

http://en.wikipedia.org/wiki/Work_sampling#cite_note-Groover-0

Question No: 22 (Marks: 1) - Please choose one

Which of the following **best** describes the concept of the value chain?

- ▶ The step-wise increases in product prices as raw materials are turned into goods/services
- ▶ Adding financial value to an organization through the acquisition of other firms
- ▶ A sequence of activities that involve movement of materials in a production facility
- ▶ **All steps in the transformation process that add value even if they don't come from manufacturing**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html (See the **Question No. 12**)

Question No: 23 (Marks: 1) - Please choose one

Quality, costs, lead times, operating resources are all related to which one of the following strategies.

- ▶ Organizational strategy
- ▶ Financial strategy
- ▶ **Operational strategy**
- ▶ Tectical strategy

Ref: OPERATIONS STRATEGY: (Deals with the operations aspect of an organization).

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OS is related to products, processes, methods, operating resources, quality, costs, lead times, and scheduling.

http://docs.google.com/viewer?a=v&q=cache:Z8OTKodTI24J:bulatov.org.ua/teaching_courses/nam_operations/L2%2520PRODUCTIVITY,%2520COMPETITIVENESS,%2520STRATEGY.doc+Quality,+costs,+lead+times,+operating+resources+are+all+related+to+Operational+strategy&hl=en&pid=bl&srcid=ADGEESjFppdZdPqJCYGeE5eZ0lbXSbBIaQuAZHRq8WGSAb060LQFyePsZ7uLK3tBxikelBwidDvqI2uehI7dlnTODYpZMU2xVYk6oWk7IHpLh4hW3Brot6pOUAef0XbM42tJV6kLRzg&sig=AHIEtbTIW5C5SYPMTZqjIHd9wX_vuoJE6g

Question No: 24 (Marks: 1) - Please choose one

Which one of the following represents the series of a time forecast?

- ▶ Averaging, cycle, seasonality, random variations
- ▶ Trend, seasonality, exponential smoothing
- ▶ Trend, cycle, seasonality, moving average
- ▶ **Trend, cycle, seasonality, random variations**

Ref:

http://books.google.com/books?id=8JM6wU_sBc0C&pg=PA144&dq=Which+one+of+the+following+represents+the+series+of+a+time+forecast?+++++Averaging#v=onepage&q&f=false

Question No: 25 (Marks: 1) - Please choose one

The purpose of _____ is to coordinate and control all the required sources so that productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control
- ▶ **Demand management**
- ▶ Forecasting
- ▶ Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvgP9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=true

Question No: 26 (Marks: 1) - Please choose one

Which relationship exists between the robustness of a product and the probability of failure?

- ▶ Positive relation
- ▶ Direct relation

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► **Inverse relation**

► Negative relation

Ref by Instructor: When the probability of failure is high then it means that there are flaws in the product design or in manufacturing which may affect the product negatively and can lead to its failure and this case the robustness which is the strength or the healthiness of the product will be low. **For the high robustness of the product the probability of failure must be low and the extent to which the relationship is Inverse depends upon the rate of the probability of failure.** For example if a product has 80% probability of functioning then the probability why would it fail will be of 20% and this is due to this inverse relationship.

Question No: 27 (Marks: 1) - Please choose one

Which of the following refers to the way an organization chooses to produce its goods or services?

► **Process selection**

- Process reengineering
- Process redesign
- Process design

Ref: Process Selection refers to the way an organization chooses to produce its good or services. **(Handouts Page No. 77)**

Question No: 28 (Marks: 1) - Please choose one

The formula for determining the required cycle time is operation time per day divided by:

- Sum of task times
- Actual output per day (in units)
- Number of workstations

► **Desired output (in units)**

Ref: Cycle time is the maximum time allowed at each workstation to complete its set of tasks on a unit. If CT represents cycle time and D represents the desired output then we can calculate cycle time as **(Handouts Page No. 85)**

Question No: 29 (Marks: 3)

Write down the characteristics of well designed service system?

1. A well designed system should be well versed with organization vision & mission.
2. It should cost effective
3. User friendly & sustainable.
4. It should have ability to make effective link between front & backend operations.
5. Accommodation of variable changes in future.
6. Simple requirements & handling few customer at every customer centre.

Question No: 30 (Marks: 3)

What qualities does a successful job design contain?

A successful job design contains following qualities.

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1. Carried out by experience personal who have necessary training & background.
2. Consistent with goals of organization
3. Shared with new employees
4. In documented Form
5. Understood & agreed by both management & employees
6. Factors that affect job design.

Question No: 31 (Marks: 5)

Suppose you want to estimate the time required to perform a certain task by the two employees. One employee's study yielded a mean of 6.4 minutes and standard deviation of 2.1 minutes with 95% confidence Interval. Other employee's study yielded a mean of 2.1 minutes and standard deviation of 6.4 minutes with confidence interval of 95%. Now how many observations you will need if desired maximum error is 10% of sample mean? ($z = 1.96$) Do both the employees have same number of observations?

Employee # 1:

Mean time = $\bar{X} = 6.4$ mins

Standard Deviation = $S = 2.1$ min.

$z = 1.96$

Error = $A = 10\% = 0.1$

$n = (zs/ax)^2$

$= [(1.96) (2.1) / (0.1) (6.4)]^2$

$= [4.116 / 0.64]^2$

$= (6.43125)^2$

$= 41.36$

41 observations

Employee # 2:

Mean time = $\bar{X} = 2.1$ mins

Standard Deviation = $S = 6.4$ min.

$z = 1.96$

Error = $A = 10\% = 0.1$

$n = (zs/ax)^2$

$= [(1.96) (6.4) / (0.1) (2.1)]^2$

$= [12.544 / 0.21]^2$

$= (59.733)^2$

$= 3568.03$

3568 observations

Question No: 32 (Marks: 5)

In some organizations capacity planning takes place very regularly and in some it takes place seldom. What are the factors that influence the frequency of capacity

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planning?

FACTORS INFLUENCE THE FREQUENCY OF CAPACITY PLANNING:

1. Capacity strategy for long-term demand which focus on demand patterns and takes into account growth rate and variability
2. Facilities that focus on cost of building and operating
3. Technological changes relate to rate and direction of technology changes
4. Behavior of competitors
5. Availability of capital and other inputs

Paper No. 05

MIDTERM EXAMINATION Spring 2009

MGT613- Production / Operations Management (Session - 1)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

A business process is a logical set of tasks or activities that:

- ▶ Are specific to the operations function
- ▶ Are specific to the marketing function
- ▶ **Are interdependent with other processes**
- ▶ Have exactly the same performance measures for any process

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter5/multiple_choice_quiz.html (See the Question No. 05)

Question No: 2 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute value?

- ▶ $(\text{Quality} + \text{Speed} - \text{Flexibility}) / \text{Cost}$
- ▶ **$(\text{Quality} + \text{Speed} + \text{Flexibility}) / \text{Cost}$**
- ▶ $(\text{Quality} + \text{Speed} - \text{Cost}) / \text{Flexibility}$
- ▶ $(\text{Quality} + \text{Speed} + \text{Cost}) / \text{Flexibility}$

Ref: $\text{Value} = \text{Performance} / \text{Cost} = (\text{Quality} + \text{Speed} + \text{Flexibility}) / \text{Cost}$ (Handouts page No. 10)

Question No: 3 (Marks: 1) - Please choose one

Which of the following is referred to as plans for achieving goals?

- ▶ Rules
- ▶ **Strategies**
- ▶ Policies

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► Mission

Ref: Strategies are Plans for achieving organizational goals (Handouts Page No. 12)

Question No: 4 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

- A factor which may be significant in other parts of the organization
- **A factor which gives an organization a competitive edge**
- A factor which serves as a minimum standard for purchase
- A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to be perceived as better than the competitor's services. (Handouts Page No. 15)

Question No: 5 (Marks: 1) - Please choose one

To make operations strategy effective it should be:

- Independent of the organization's strategy
- **Consistent with the organization's strategy**
- Developed by a first line manager
- Independent of time dimension

Ref: Operations strategy – The approach, consistent with organization strategy that is used to guide the operations function. We first study strategy design process with example for manufacturing and Services. (Handouts Page No. 14)

Question No: 6 (Marks: 1) - Please choose one

Which one of the following techniques uses historical data to predict future value of a variable of interest?

- **Time series method**
- Causal forecasting method
- Qualitative forecasting method
- Intuitive forecasting method

Ref: Time series - uses historical data assuming the future will be like the past and depend on developing relationships between variables that can be expressed to predict future values. (Handouts page no. 35)

Question No: 7 (Marks: 1) - Please choose one

Which one of the following forecasting techniques uses explanatory variables to predict future demand?

- **Associative forecast**
- Time series forecast
- Consumer survey
- Executive opinion

Ref: Associative Models: forecasting technique that uses explanatory variables to predict future demand. <http://cramberry.net/sets/26728-operational-management-3>

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Question No: 8 (Marks: 1) - Please choose one

Which one of the following involves completing a series of questionnaires each developed from the previous one, to achieve a consensus forecast?

- ▶ Consumer surveys
- ▶ Executive opinion
- ▶ Time series forecast
- ▶ **Delphi method**

Ref: Delphi method: Managers and staff complete a series of questionnaires, each developed from the previous one, to achieve a consensus forecast. (Handouts Page No35)

Question No: 9 (Marks: 1) - Please choose one

In which one of the following situations, the use of a decision tree is required instead of a payoff table?

- ▶ When there are more than three states of nature
- ▶ When there are more than three decision payoffs
- ▶ When the decision situation encompasses an extended time period
- ▶ **When a series of decisions is required**

Ref: However, a payoff table is usually limited to a single decision situation, as in our real estate investment example. If a decision situation requires a series of decisions, then a payoff table cannot be created, and a decision tree becomes the best method for decision analysis. <http://flylib.com/books/en/3.287.1.160/1/>

Question No: 10 (Marks: 1) - Please choose one

Which one of the following is an outcome of Maximin criterion?

- ▶ **The best of the worst possible payoff**
- ▶ The best possible payoff
- ▶ The best average payoff
- ▶ The least of the worst regrets

Ref: Maximin determines the worst payoff for each alternative; the operations manager chooses the best worst alternative. Meaning the least (best) of the worst. (Handouts Page No. 26)

Question No: 11 (Marks: 1) - Please choose one

Given the table:

Possible	Alternatives future demand	
	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000
Large facility	18,000	15,000

Which one of the following is the correct payoff under LAPLACE approach?

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- ▶ Rs. 9,000
- ▶ Rs. 16,000
- ▶ Rs. 33,000
- ▶ **Rs. 16,500**

Ref: Take average for each alternative and choose the alternative with best average.

Small facility = $10000+8000=18000/2=9000$

Medium facility = $12000+20000=32000/2=16000$

Large facility = $18000+15000=33000/2=16500$

Question No: 12 (Marks: 1) - Please choose one

Which one of the following is called as the difference between designed and utilized capacity?

- ▶ Design capacity
- ▶ Effective capacity
- ▶ **Buffer capacity**
- ▶ Utilization rate

Ref: Capacity cushion or buffer is the difference between designed and utilized capacity.

<http://www.docstoc.com/docs/54960443/Lecture-16ppt> (See the Slide No. 05)

Question No: 13 (Marks: 1) - Please choose one

Which one of the following mathematical expressions is used to compute utilization?

- ▶ Actual output / effective capacity
- ▶ **Actual output / design capacity**
- ▶ Actual output + effective capacity
- ▶ Actual output - design capacity

Ref: For example:

Actual Output = 36 units / day

Design Capacity = 50 units / day

Utilization = $36/50 * 100 = 72\%$ (Handouts Page No. 66)

Question No: 14 (Marks: 1) - Please choose one

Which of the following terms of financial analysis are important for the organization to proceed with a capacity alternative decision?

- ▶ Cash flow and fixed cost
- ▶ Present value and fixed cost
- ▶ **Cash flow and present value**
- ▶ Cash flow and profit

Ref: Operations manager along with managerial accountant often work to calculate what cash flow or present value in terms of rupees is available for the organization to proceed with a capacity alternative decision. (Handouts Page No. 76)

Question No: 15 (Marks: 1) - Please choose one

Which one of the following is the first step in line balancing?

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► **Specify the sequential relationship among tasks**

- Determine the required cycle time.
- Determine the minimum number of workstations.
- Determine the desired output

Ref: http://www.slidefinder.net/c/chapter_manufacturing_processes/25822455

(See the Slide No. 13)

Question No: 16 (Marks: 1) - Please choose one

Which one of the following layout types is associated with car assembly?

- Fixed position layout
- Process layout
- **Product layout**
- Hybrid layout

Ref: Product – Layout should suit to the nature of product and its method of production. I.e. aircraft manufacturing and car manufacturing layouts will be different. Sales also affect the layout. <http://www.scribd.com/doc/7369836/Facility-Layout>

Question No: 17 (Marks: 1) - Please choose one

What would be the required cycle time for a process that operates 9 hours daily with a desired output of 300 units per day?

- 0.03 minutes
- **1.8 minutes**
- 2700 minutes
- 291 minutes

Ref: $CT = \text{Time Cycle} = \text{Operating Time} / \text{Desire Output}$

$CT = \text{Time Cycle} = 9 * 60 / 300 = \mathbf{1.8 \text{ minutes}}$

Question No: 18 (Marks: 1) - Please choose one

What would be the output capacity if an assembly line operates for 7 hours per day with a cycle time of 2.0 minutes?

- 210 units per day
- **3.5 units per day**
- 0.004 units per day
- 14 units per day

Ref: $\text{Output Capacity} = \text{Operating Time} / \text{Cycle Time}$

$\text{Output Capacity} = 7 / 2.0$

Output Capacity = 3.5 Units per day

Question No: 19 (Marks: 1) - Please choose one

Which of the following probability distribution is used most extensively in dealing with forecasting errors?

- **Normal**
- Exponential

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- ▶ Beta
- ▶ Pareto

Ref: http://highered.mcgraw-hill.com/sites/0072443901/student_view0/chapter3/self_quiz_from_cd.html (See the Question No. 10)

Question No: 20 (Marks: 1) - Please choose one

Which of the following takes into consideration the design of aesthetics of the product?

- ▶ Functional design
- ▶ Production design
- ▶ Service design
- ▶ **Product design**

Ref: Product design (i.e., industrial design) is perhaps most associated with aesthetic considerations <http://www.acrwebsite.org/volumes/display.asp?id=7824>

Question No: 21 (Marks: 1) - Please choose one

Which of the following factors are considered in product and service design?

- ▶ Customer satisfaction, quality, and improvement costs
- ▶ Employee motivation, quality, and production costs
- ▶ Customer satisfaction, flexibility, and production costs
- ▶ **Customer satisfaction, quality, and production costs**

Ref: A good product/service design can ensure customer satisfaction, quality and production costs. (Handouts Page No. 44)

Question No: 22 (Marks: 1) - Please choose one

An automatic car wash is an example of which of the following?

- ▶ Customized service
- ▶ Batch processing
- ▶ Intermittent processing
- ▶ **Standardized service**

Ref: Standardized service implies that every customer or item processed receives essentially the same service. An automatic car wash is a good example. <http://highered.mcgraw-hill.com/sites/dl/free/0070911894/90584/2ndSampleCh4.pdf>

Question No: 23 (Marks: 1) - Please choose one

Which of the following is an advantage of standardization?

- ▶ Frozen designs
- ▶ Customized parts
- ▶ **Interchangeable parts**
- ▶ Reduced variety

Ref: Advantages of Standardization

- Interchangeable parts
- Orders can be filled from inventory

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- Easier repair & replacement
- Lower design costs. http://docs.google.com/viewer?a=v&q=cache:-HcGpKkXXGsJ:mkuyzu.etu.edu.tr/Chp4.pdf+advantage+of+standardization%3F+%E2%96%BA+Frozen+designs+%E2%96%BA+Customized+parts+%E2%96%BA+Interchangeable+parts+%E2%96%BA+Reduced+variety&hl=en&gl=pk&pid=bl&srcid=ADGEEShgD0r40WYN7Ah8bToiQKVOUwMol8VFKVcS2vJeitl zsbJWm6fdzboUL8-C9RzapNADGHnArzelc8KscxcMNZXHbDSWJAFakyrzuLT3Ww2YhDSABe-14JurNU6Ji-LS_qqG5AQ&sig=AHIEtbQ1hSU2is9EsB7nuPrO6QYqRilzBQ

Question No: 24 (Marks: 1) - Please choose one

Which one of the following is the most significant disadvantage of standardization?

- ▶ Reduced design costs
- ▶ Interchangeable parts
- ▶ **Reduced variety**
- ▶ Customized parts

Ref: ALL ARE ADVANTAGES EXCEPT 3RD OPTION:

Advantages of Standardization

- Interchangeable parts
- Orders can be filled from inventory
- Easier repair & replacement
- Lower design costs. http://docs.google.com/viewer?a=v&q=cache:-HcGpKkXXGsJ:mkuyzu.etu.edu.tr/Chp4.pdf+advantage+of+standardization%3F+%E2%96%BA+Frozen+designs+%E2%96%BA+Customized+parts+%E2%96%BA+Interchangeable+parts+%E2%96%BA+Reduced+variety&hl=en&gl=pk&pid=bl&srcid=ADGEEShgD0r40WYN7Ah8bToiQKVOUwMol8VFKVcS2vJeitl zsbJWm6fdzboUL8-C9RzapNADGHnArzelc8KscxcMNZXHbDSWJAFakyrzuLT3Ww2YhDSABe-14JurNU6Ji-LS_qqG5AQ&sig=AHIEtbQ1hSU2is9EsB7nuPrO6QYqRilzBQ

Question No: 25 (Marks: 1) - Please choose one

Product life cycle is based on which of the following components?

- ▶ Place
- ▶ **Demand**
- ▶ Supply
- ▶ Price

Ref: Life Cycle Strategies are based on Demand.

http://www.hammertap.com/nl_0050/

Question No: 26 (Marks: 1) - Please choose one

Which one of the following is the final stage of product life cycle?

- ▶ Growth

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► **Decline**

- Maturity
- Planning

Ref: The final stage in the life cycle is the decline.

<http://www.davetalks.com/articles/who-wants-live-forever.html>

Question No: 27 (Marks: 1) - Please choose one

Which one of the following statements relates to the final stage of product life cycle?

- Improve reliability, and reduce production costs
- **Improve packaging and reliability**
- Improve reliability, and reduce quality
- Improve reliability, and reduce promotion costs

Ref: DECLINE: In this phase, most of the organizations adopt a defensive design R&D Strategy in an attempt to prolong the life of the product by employing new packaging, redesigning it, improving its reliability.

<http://www.websukat.com/TQM-product-life-cycle.htm>

Question No: 28 (Marks: 1) - Please choose one

Which of the following refers to translate the voice of the customer into technical design requirements?

- Concurrent design
- Design for manufacture
- Robust design

► **Quality functional deployment**

Ref: A popular managerial view is that the Quality Function should be deployed at the source or at the design stage. We also should know what Quality Function Deployment is. Two common answers being that it is the voice of the customer (which always sets a standard for the service organization to follow) and the second one being that it should be in the form of a house of quality **(Handouts Page No. 55)**

Question No: 29 (Marks: 1) - Please choose one

Which one of the following is correct about the range of availability on a measuring index?

- 0.1 to 1.0
- **0 to 1.0**
- 0.5 to 1.0
- 0.01 to 1.0

Ref:

http://books.google.com.pk/books?id=818wT_TGJgAC&pg=PA23&lpg=PA23&dq=index+range+from+0+to+1.0&source=bl&ots=swmbQfISvn&sig=Nj0_bfiYtEEwwonlQAMYUkWh0Bw&hl=en&ei=fU-4Tf7SLM-xhAeY6rSADw&sa=X&oi=book_result&ct=result&resnum=7&ved=0CD8Q6AEwBjgK#v=onepage&q=index%20range%20from%200%20to%201.0&f=false

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Question No: 30 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 250 hours between repairs, and the mean repair time is expected to be 3 hours?

- ▶ 1.01
- ▶ 5.03
- ▶ 3.0
- ▶ **0.98**

Ref: $\text{Availability} = (\text{MTBF}) / (\text{MTBF} + \text{MTR})$

$\text{Availability} = 250 / (250 + 3)$

$\text{Availability} = 250 / 253 = \mathbf{0.988}$

Question No: 31 (Marks: 1) - Please choose one

Capacity planning involves answering all of the following questions EXCEPT:

- ▶ What kind of capacity is needed?
- ▶ How much is needed?
- ▶ When is it needed?
- ▶ **Who is going to decide?**

Ref: These questions are:

1. What kind of capacity is needed?
2. How much is needed?
3. When is it needed? **(Handouts Page No. 64)**

Question No: 32 (Marks: 1) - Please choose one

The disadvantages of specialization to management include all of the following EXCEPT:

- ▶ More absenteeism
- ▶ Minimum responsibility
- ▶ More turnover
- ▶ **More difficult to teach the job**

Ref: [http://highered.mcgraw-](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html)

[hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html) **(See the Question No. 06)**

Question No: 33 (Marks: 1) - Please choose one

Which one of the following refers to a team having representatives from different functional areas of the organization?

- ▶ Traditional work group
- ▶ Self-directed team
- ▶ **Cross-functional team**
- ▶ Self motivated team

Ref: While having representatives from different functions as team members is predicted to facilitate communication with non-team members from those functions, this structure

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may also create internal conflicts.

<http://docs.google.com/viewer?a=v&q=cache:CpKetaj5A98J:dspace.mit.edu/bitstream/handle/1721.1/2310/SWP-3179-22870423.pdf%3Fsequence%3D1+team+having+representatives+from+different+functional+areas+of+the+organization&hl=en&gl=pk&pid=bl&srcid=ADGEESiZz0JtbazwsFj3WOxuhpTDJ3LMgStdq5o3KAjjil6-ogLEsA07go0PRGGxnd9tFSN1EyQmfxsF36ST6PakVPq8W0sFVgyN0kKutPRmM5vpEAOtjjM1eJkQDDCvaG0-o0P0BC5&sig=AHIEtbQPVw7bHUJDdOn5ZCFS7AOy6L3gTA>

Question No: 34 (Marks: 1) - Please choose one

Which one of the following refers to the length of time needed to complete a job?

- ▶ Work sampling methods
- ▶ **Work measurement**
- ▶ Job design
- ▶ Methods analysis

Ref: And last but not the least work measurements dealt specifically with the length of time needed to complete a job and was linked with Personnel Planning, Cost Estimation, Budgeting, Scheduling and Worker Compensation. **(Handouts Page No. 93)**

Question No: 35 (Marks: 1) - Please choose one

Which one of the following location strategies follows a decentralized approach?

- ▶ Process plant strategy
- ▶ Market area plant strategy
- ▶ Cost conservation strategy
- ▶ **Product plant strategy**

Ref: Product plant strategy : (Decentralized approach)

In this entire products or product lines are produced in separate plants

<http://www.scribd.com/doc/50297174/11/Multiple-Plant-Strategies>

Question No: 36 (Marks: 1) - Please choose one

Which one of the following location strategies is favored by automobile manufacturers?

- ▶ Product plant strategy
- ▶ **Process plant strategy**
- ▶ Market area plant strategy
- ▶ Cost conservation strategy

Ref: Process plant strategy: (Sharing of Problems/Improvements among plants) in this different plants concentrate on different aspects of a process.

E.g. Automobile manufacturers use this approach with different plants for Engines, Transmissions, Body Stamping, and Radiators.

<http://www.scribd.com/doc/50297174/11/Multiple-Plant-Strategies>

Question No: 37 (Marks: 1) - Please choose one

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Which of the following refers to bringing together engineering design and manufacturing personnel early in the design phase?

- ▶ Reverse engineering
- ▶ **Concurrent engineering**
- ▶ Manufacturability
- ▶ Serviceability

Ref: Concurrent engineering is the bringing together of engineering design and manufacturing personnel early in the design phase. (Handouts page no. 53)

Question No: 38 (Marks: 1) - Please choose one

Which of the following is the primary input in capacity planning?

- ▶ Supply chain capabilities
- ▶ Competitors' strengths
- ▶ **Demand forecasts**
- ▶ Overall cost estimates

Ref: Besides service level requirements, the other key input into the capacity planning process is a forecast or plan for the organization's future. Capacity planning is really just a process for determining the optimal way to satisfy business requirements such as forecasted increases in the amount of work to be done, while at the same time meeting service level requirements. <http://www.teamquest.com/pdfs/whitepaper/tqwp23.pdf>

Question No: 39 (Marks: 1) - Please choose one

Which of the following best describes the concept of the value chain?

- ▶ The step-wise increases in product prices as raw materials are turned into goods/services
- ▶ Adding financial value to an organization through the acquisition of other firms
- ▶ A sequence of activities that involve movement of materials in a production facility
- ▶ **All steps in the transformation process that add value even if they don't come from manufacturing**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html (See the Question No. 12)

Question No: 40 (Marks: 1) - Please choose one

The Strategies which are more focused on maintaining or improving the quality of an organization's products or services are known as:

- ▶ Quality at the source
- ▶ Time based strategies
- ▶ Cost leadership strategies
- ▶ **Quality-based strategies**

Ref: Quality-based strategies

Focuses on maintaining or improving the quality of an organization's products or services (Handouts Page No. 18)

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Question No: 41 (Marks: 5)

What are some of the reasons that do not favor the use of process layout?

1. Creates dull, repetitive jobs.
2. Poorly skilled workers may not maintain equipment or quality of output of service.
3. Fairly inflexible to changes in volume.
4. Highly susceptible to shutdowns.
5. Needs preventive maintenance.
6. Individual incentive plans are impractical

Question No: 42 (Marks: 5)

Do you perceive that operation management and operation research are the same concepts?

NO both concepts are different from each other; we can elaborate both in the following manner:

Operation Management:

Operations management is an area of management concerned with overseeing, designing, and redesigning business operations in the production of goods and/or services. It involves the responsibility of ensuring that business operations are efficient in terms of using as little resources as needed, and effective in terms of meeting customer requirements. It is concerned with managing the process that converts inputs (in the forms of materials, labor, and energy) into outputs (in the form of goods and/or services). The relationship of operations management to senior management in commercial contexts can be compared to the relationship of line officers to the highest-level senior officers in military science. The highest-level officers shape the strategy and revise it over time, while the line officers make tactical decisions in support of carrying out the strategy.

Operation Research:

Operations research (also referred to as decision science or management science) is an interdisciplinary mathematical science that focuses on the effective use of technology by organizations. In contrast, many other science & engineering disciplines focus on technology giving secondary considerations to its use.

Employing techniques from other mathematical sciences — such as mathematical modeling, statistical analysis, and mathematical optimization — operations research arrives at optimal or near-optimal solutions to complex decision-making problems. Because of its emphasis on human-technology interaction and because of its focus on practical applications, operations research has overlap with other disciplines, notably industrial engineering and management science, and draws on psychology and organization science. Operations Research is often concerned with determining the maximum (of profit, performance, or yield) or minimum (of loss, risk, or

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cost) of some real-world objective.

Paper No. 06

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 2)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per dollar input?

▶ **Capital**

▶ Energy

▶ Labor

▶ Machine

Ref: Capital Productivity

Units of output per Rs. input

Dollar value of output per Rs. Input

(Handouts Page No. 19)

Question No: 2 (Marks: 1) - Please choose one

What would be the productivity if a machine produced 50 units in 3 hours?

▶ 0.066 units per hr

▶ **16.66 units per hr**

▶ 6.766 units per hr

▶ 60.66 units per hr

Ref: Productivity is a measure of the effective use of resources, usually expressed as the ratio of output to input .Also called Efficiency at times

Productivity = Units Produced / Hours

Productivity = 50 / 3 = 16.66 per hour

Question No: 3 (Marks: 1) - Please choose one

The major business function consisting of research and development, product design, manufacturing, marketing, distribution, and customer service is refers to:

▶ Value chain

▶ The transformation process

▶ Quality control

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► **Life cycle**

Ref:

<http://books.google.com.pk/books?id=f5p17Sz5NLMC&pg=PA379&lpg=PA379&dq=of+research+and+development#v=onepage&q=of%20research%20and%20development&f=false>

Question No: 4 (Marks: 1) - Please choose one

Which of the following is NOT usually considered a general characteristic of a service?

- Production and sales cannot easily be separated functionally
- Many services involve both tangible and intangible outputs
- **Production and consumption can always be separated**
- Degree of customer contact is high

Ref.: Since services are intangible, they cannot be stored. The production and consumption of a service usually occur at the same time.

http://docs.google.com/viewer?a=v&q=cache:L4jyS-JP7UsJ:highered.mcgraw-hill.com/sites/dl/free/0073403318/823112/Sample_Chap_01.pdf+Which+of+the+following+is+NOT+usually+considered+a+general+characteristic+of+a+service%3F+%E2%96%BA+Production+and+sales+cannot+easily+be+separated+functionally+%E2%96%BA+Many+services+involve+both+tangible+and+intangible+outputs+%E2%96%BA+Production+and+consumption+can+always+be+separated+%E2%96%BA+Degree+of+customer+contact+is+high&hl=en&gl=pk&pid=bl&srcid=ADGEEShuWM-Q96C6O4K2DaS9KmGK-rPQprFwAtcLde-7pLcrju7ARaKaP-W0cfES19wotDRnGLRXY2mt2-ESMdhRisXsgqIHrkAVBjXKgzKtFi9C8cxTZbCpNt1A4s-LEGwm619tSfgJ&sig=AHIEtbSbq2OWcRtK1dw4gNnlnLQJb-T-Kw

Question No: 5 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

- A factor which may be significant in other parts of the organization
- **A factor which gives an organization a competitive edge**
- A factor which serves as a minimum standard for purchase
- A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to be perceived as better than the competitor's services. (Handouts Page No. 15)

Question No: 6 (Marks: 1) - Please choose one

Which one of the following is an implication of Laplace approach of decision making?

- The best of the worst possible payoff
- The best possible payoff
- **The best average payoff**
- The least of the worst regrets

Ref: Laplace, the best payoff of the average for each alternative. (Handouts Page No. 27)

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Question No: 7 (Marks: 1) - Please choose one

Which one of the following is an outcome of Maximin criterion?

▶ **The best of the worst possible payoff**

▶ The best possible payoff

▶ The best average payoff

▶ The least of the worst regrets

Ref: Maximin determines the worst payoff for each alternative; the operations manager chooses the best worst alternative. Meaning the least (best) of the worst. (Handouts Page No. 26)

Question No: 8 (Marks: 1) - Please choose one

Given the table:

Possible Alternatives future demand

Possible future demand	
Low (Rs.)	High (Rs.)
10,000	8,000
12,000	20,000
18,000	15,000

Which one of the following is the correct payoff under MAXIMIN approach?

▶ **Rs. 8,000**

▶ Rs. 12,000

▶ Rs. 18,000

▶ Rs. 20,000

Ref: Highest minus minimum

$\text{MAXMIN} = 20000 - 12000 = 8000$

Question No: 9 (Marks: 1) - Please choose one

Which one of the following forecasting techniques is used to identify a trend when data is neither growing nor declining rapidly and has no seasonal characteristics?

▶ **Simple moving average**

▶ Delphi method

▶ Trend adjusted forecast

▶ Naïve forecast

Ref: The Moving Average model takes the average of several periods of data; the result is a dampened or smoothed data set; use this model when demand is stable and there is no evidence of a trend or seasonal pattern. <http://www.shmula.com/forecasting-unweighted-and-weighted-moving-average-model/308/>

Question No: 10 (Marks: 1) - Please choose one

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Which one of the following refers to the maximum output that a firm can produce under ideal conditions?

- ▶ **Design capacity**
- ▶ Effective capacity
- ▶ Capacity planning
- ▶ Utilization rate

Ref: Design capacity is the maximum output rate or service capacity an operation, process, or facility. (Handouts Page No. 66)

Question No: 11 (Marks: 1) - Please choose one

Which one of the following perspectives is the most obvious to be considered while evaluating alternatives for future capacity?

- ▶ Social
- ▶ Political
- ▶ **Economic**
- ▶ Legal

Ref:

http://books.google.com.pk/books?id=tqVIT0xE4NAC&pg=PA192&dq=Economic+perspectives+evaluating+alternatives+for+future+capacity&hl=en&ei=1o13TfntIoKCOsY1McB&sa=X&oi=book_result&ct=result&resnum=1&ved=0CCcQ6AEwAA#v=onepage&q=Economic%20perspectives%20evaluating%20alternatives%20for%20future%20capacity&f=false

Question No: 12 (Marks: 1) - Please choose one

Which of the following terms of financial analysis are important for the organization to proceed with a capacity alternative decision?

- ▶ Cash flow and fixed cost
- ▶ Present value and fixed cost
- ▶ **Cash flow and present value**
- ▶ Cash flow and profit

Ref: Operations manager along with managerial accountant often work to calculate what cash flow or present value in terms of rupees is available for the organization to proceed with a capacity alternative decision. (Handouts Page No. 76)

Question No: 13 (Marks: 1) - Please choose one

Which one of the following manufacturing process is associated with high volume car manufacture?

- ▶ Job shop
- ▶ **Assembly line**
- ▶ Batch
- ▶ Automation

Ref: Before discussing JIT look at in-line assembly systems (traditionally used in high volume car manufacture)

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http://webcache.googleusercontent.com/search?q=cache:rJ2HjqtUCIQJ:www.ocr.org.uk/download/sm/ocr_13258_sm_gce_unit_f524.doc+%22manufacturing+process%22+for+%22high+volume+car+manufacture?%22&hl=en

Question No: 14 (Marks: 1) - Please choose one

The formula for determining the required cycle time is operation time per day divided by:

- ▶ Sum of task times
- ▶ Actual output per day (in units)
- ▶ Number of workstations
- ▶ **Desired output (in units)**

Ref: Cycle time is the maximum time allowed at each workstation to complete its set of tasks on a unit. If CT represents cycle time and D represents the desired output then we can calculate cycle time as **(Handouts Page No. 85)**

Question No: 15 (Marks: 1) - Please choose one

Assembly lines relate most closely to a:

- ▶ Functional layout
- ▶ **Product layout**
- ▶ Process layout
- ▶ Departmental layout

Ref: Assembly lines are a special case of product layout. In a general sense, the term assembly line refers to progressive assembly linked by some material handling device.

[http://docs.google.com/viewer?a=v&q=cache:3jUTDWx2e4IJ:www.ateneonline.it/chase2e/studenti/tn/6184-](http://docs.google.com/viewer?a=v&q=cache:3jUTDWx2e4IJ:www.ateneonline.it/chase2e/studenti/tn/6184-7_tn05.pdf+Assembly+lines+relate+most+closely+to+a:+%E2%96%BA+Functional+lay)

[7_tn05.pdf+Assembly+lines+relate+most+closely+to+a:+%E2%96%BA+Functional+lay](http://docs.google.com/viewer?a=v&q=cache:3jUTDWx2e4IJ:www.ateneonline.it/chase2e/studenti/tn/6184-7_tn05.pdf+Assembly+lines+relate+most+closely+to+a:+%E2%96%BA+Functional+lay)

[out+%E2%96%BA+Product+layout+%E2%96%BA+Process+layout+%E2%96%BA+D](http://docs.google.com/viewer?a=v&q=cache:3jUTDWx2e4IJ:www.ateneonline.it/chase2e/studenti/tn/6184-7_tn05.pdf+Assembly+lines+relate+most+closely+to+a:+%E2%96%BA+Functional+lay)

Question No: 16 (Marks: 1) - Please choose one

Which one of the following layout type is associated with a restaurant?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ Product layout
- ▶ **Hybrid layout**

Ref: [http://books.google.com.pk/books?id=sWtlOeC-](http://books.google.com.pk/books?id=sWtlOeC-3pEC&pg=PA111&lpg=PA111&dq=Hybrid+layout++is+associated+with+a+restaurant&source=bl&ots=sL8qmiQ-be&sig=nzSNWZT-NbCFBtjr0k73nnMMGc&hl=en&ei=UHe4Tdu5GoLJhAenzpGXDw&sa=X&oi=book)

[3pEC&pg=PA111&lpg=PA111&dq=Hybrid+layout++is+associated+with+a+restaurant](http://books.google.com.pk/books?id=sWtlOeC-3pEC&pg=PA111&lpg=PA111&dq=Hybrid+layout++is+associated+with+a+restaurant&source=bl&ots=sL8qmiQ-be&sig=nzSNWZT-NbCFBtjr0k73nnMMGc&hl=en&ei=UHe4Tdu5GoLJhAenzpGXDw&sa=X&oi=book)

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Question No: 17 (Marks: 1) - Please choose one

Which of the following forecasting technique is based on the assumption that past data is more indicative of the future than the most recent occurrences?

▶ **Exponential smoothing**

- ▶ Linear regression
- ▶ Judgmental forecast
- ▶ Naive forecast

Ref: In many applications (perhaps in most), the most recent occurrences are more indicative of the future than those in the more distant past. If this premise is valid – “that the importance of data diminishes as the past becomes more distant” - then exponential smoothing may be the most logical and easiest method to use.

http://docs.google.com/viewer?a=v&q=cache:QTJvd6_zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+Exponential+smoothing+is+based+on+the+assumption+that+past+data+is+more+indicative+of+the+future+than+the+most+recent+occurrences&hl=en&gl=pk&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMlzbF5wpl0nxlgJ8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEtbTwalQd7sTFtecd46RVg72u_ZLEEg

Question No: 18 (Marks: 1) - Please choose one

In exponential smoothing model, α denotes:

▶ **Smoothing constant**

- ▶ Actual forecast
- ▶ Forecast error
- ▶ Previous forecast

Ref: α = Alpha smoothing constant (Handouts page No. 40)

Question No: 19 (Marks: 1) - Please choose one

Which of the following takes into consideration the design of aesthetics of the product?

- ▶ Functional design
- ▶ Production design
- ▶ Service design
- ▶ **Product design**

Ref: Product design (i.e., industrial design) is perhaps most associated with aesthetic considerations <http://www.acrwebsite.org/volumes/display.asp?id=7824>

Question No: 20 (Marks: 1) - Please choose one

Which of the following factors are considered in product and service design?

- ▶ Customer satisfaction, quality, and improvement costs
- ▶ Employee motivation, quality, and production costs
- ▶ Customer satisfaction, flexibility, and production costs

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► **Customer satisfaction, quality, and production costs**

Ref: A good product/service design can ensure customer satisfaction, quality and production costs. (**Handouts Page No. 44**)

Question No: 21 (Marks: 1) - Please choose one

Which one of the following is the overall objective of product and service design?

- Customer satisfaction and variety
- **Customer satisfaction and profitability**
- Reliability and variety
- Quality and reliability

Ref: <http://www.docstoc.com/docs/19583340/Chapter-4-product-and-service-designppt>
(**See the Slide No. 14**)

Question No: 22 (Marks: 1) - Please choose one

CBR stands for which one of the following?

- Commercial board of revenue
- Central board of recycling
- Central board of renovation
- **Central board of revenue**

Ref: CBR denotes Center Board of Revenue (**Handouts Page No. 46**)

Question No: 23 (Marks: 1) - Please choose one

Which one of the following designs resists modifications?

- **Frozen design**
- Product design
- Service design
- Robust design

Ref: Another disadvantage is that a manufacturer may freeze (standardize) a **design** prematurely and, once the **design is frozen**, it may find compelling reasons to resist modification.

http://webcache.googleusercontent.com/search?q=cache:ASewL4qNRRkJ:highered.mcgraw-hill.com/sites/dl/free/0073041912/354902/ste41912_ch04.pdf+Frozen+design+%E2%96%BA+Product+design+%E2%96%BA+Service+design+%E2%96%BA+Robust+design+resists+modifications&cd=3&hl=en&ct=clnk&gl=pk&source=www.google.com.pk

Question No: 24 (Marks: 1) - Please choose one

Which one of the following is a curve showing failure rate over time?

- Cost curve
- **Bath tub curve**
- Fish bone diagram
- Reliability curve

Ref: The figure above shows a bathtub shape and thus rightly is referred to as the

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Bathtub curve. On the Y axis we represent the Failure rate and on the X axis we represent the Time. (Handouts Page No. 60)

Question No: 25 (Marks: 1) - Please choose one

Which of the following management level is responsible for long-range capacity planning?

- ▶ Lower management
- ▶ Middle management
- ▶ **Top management**
- ▶ Non managerial employees

Question No: 26 (Marks: 1) - Please choose one

Capacity planning involves answering all of the following questions EXCEPT:

- ▶ What kind of capacity is needed?
- ▶ How much is needed?
- ▶ When is it needed?
- ▶ **Who is going to decide?**

Ref: These questions are:

4. What kind of capacity is needed?
5. How much is needed?
6. When is it needed? (Handouts Page No. 64)

Question No: 27 (Marks: 1) - Please choose one

The advantages of specialization to management include all of the following EXCEPT:

- ▶ Rapid training of the workforce
- ▶ Ease in recruiting new workers
- ▶ **Fewer turnovers**
- ▶ Less boredom for workers

Ref:

http://books.google.com.pk/books?id=d3eREcsD35sC&pg=PA224&lpg=PA224&dq=Advantages+of+specialization+To+management+1+Rapid+training+of+the+work+force+2.+Ease+in+recruiting+new+workers+3.+High+output+due+to+simple+and+repetitive+work&source=bl&ots=R5XoCdpmob&sig=H_j0m4evxgrOj_nOQ9b65cT3pg8&hl=en&ei=kwi3TbT0J8HU4wbg4aD_Dw&sa=X&oi=book_result&ct=result&resnum=2&ved=0CBgQ6AEwAQ#v=onepage&q&f=false

Question No: 28 (Marks: 1) - Please choose one

The disadvantages of specialization to management include all of the following EXCEPT:

- ▶ More absenteeism
- ▶ Minimum responsibility
- ▶ More turnover
- ▶ **More difficult to teach the job**

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Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the Question No. 06)

Question No: 29 (Marks: 1) - Please choose one

Technology has impacted the work place by:

- ▶ Adding to the existing geographical barriers for recruiting
- ▶ Increasing the cost of telecommuting
- ▶ Increasing the amount required to be spent on training
- ▶ **Unifying the workforce to a common skill level**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the Question No.10)

Question No: 30 (Marks: 1) - Please choose one

Which of the following can be used to compute standard time?

- ▶ Multiplying the elemental average time by the rating factor
- ▶ Dividing the average elemental time by the rating factor
- ▶ Multiplying the normal cycle time by the rating factor
- ▶ **Multiplying the normal cycle time by one plus the allowance factor**

Ref: Standard Time=ST=NT X AF is the normal time plus allowance for delays like (getting a glass of water or going to the washroom human needs) (Handouts Page No. 92)

Question No: 31 (Marks: 1) - Please choose one

Which one of the following is the focus of predetermined motion time system?

- ▶ **Individual human motions that are used in a job task**
- ▶ Determining the length of time it will take to undertake a particular task
- ▶ Determining the amount of time a worker spends on various activities
- ▶ Providing standard times for micro motions such as reach move and release

Ref: Motion Study - is the systematic study of the human motions used to perform an operation - the purpose is to eliminate unnecessary motions used to perform an operation. It is very effective in improving worker productivity and lowering costs.

http://docs.google.com/viewer?a=v&q=cache:7JxnvEitpVAJ:hodgesh.people.cofc.edu/DSCI304/PPT/10%2520Design%2520of%2520Work%2520Systems.pps+Which+one+of+the+following+is+the+focus+of+predetermined+motion+time+system%3F+%E2%96%BA+Individual+human+motions+that+are+used+in+a+job+task+%E2%96%BADeterminin+g+the+length+of+time+it+will+take+to+undertake+a+particular+task+%E2%96%BADet+ermining+the+amount+of+time+a+worker+spends+on+various+activities+%E2%96%BA+Providing+standard+times+for+micro+motions+such+as+reach+move+and+release&hl=en&gl=pk&pid=bl&srcid=ADGEESg98089PrQON31UO76B07KiZnAHJC27_ixZbrsmxk_tTH9ugfa4o-LOC24-Z2pYwoxHbnfe5nai0vGFbUZBAylXV3bq9nQj_xvUtiXq5xsAFOb3FJ8b98rnwbhCjd

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Question No: 32 (Marks: 1) - Please choose one

Which one of the following is an example of community factors that affect location decisions?

- ▶ Transportation
- ▶ **Quality of life**
- ▶ Location of new markets
- ▶ Location of raw materials

Ref: Community Considerations

- Quality of life
- Services
- Attitudes
- Taxes
- Environmental regulations
- Utilities
- Developer support

(Handouts Page No. 96)

Question No: 33 (Marks: 1) - Please choose one

Which one of the following is an example of site related factors that affect location decision?

- ▶ **Transportation**
- ▶ Quality of life
- ▶ Location of new markets
- ▶ Location of raw materials

Ref: Site Related Factors

- Land
- Transportation
- Environmental
- Legal

(Handouts Page No. 96)

Question No: 34 (Marks: 1) - Please choose one

Which one of the following location strategies follows a decentralized approach?

- ▶ Process plant strategy
- ▶ Market area plant strategy
- ▶ Cost conservation strategy
- ▶ **Product plant strategy**

Ref: Product plant strategy : (Decentralized approach)

In this entire products or product lines are produced in separate plants

<http://www.scribd.com/doc/50297174/11/Multiple-Plant-Strategies>

Question No: 35 (Marks: 1) - Please choose one

Which of the following is the primary input in capacity planning?

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- ▶ Supply chain capabilities
- ▶ Competitors' strengths
- ▶ **Demand forecasts**
- ▶ Overall cost estimates

Ref: Besides service level requirements, the other key input into the capacity planning process is a forecast or plan for the organization's future. Capacity planning is really just a process for determining the optimal way to satisfy business requirements such as forecasted increases in the amount of work to be done, while at the same time meeting service level requirements. <http://www.teamquest.com/pdfs/whitepaper/tqwp23.pdf>

Question No: 36 (Marks: 1) - Please choose one

Which of the following statements would generally be considered as correct job shop?

- ▶ A continuous process has lower output volume as compared to job shop
- ▶ Equipment flexibility is lower in job shop than that of a continuous process
- ▶ **Labor costs are higher in a Job Shop operation than in most other processes**
- ▶ Batch processing produces a more standard range of products than continuous flow processes

Question No: 37 (Marks: 1) - Please choose one

Which one of the following is TRUE about work sampling?

- ▶ It describes individual human motions that are used in a job task
- ▶ It involves determining the length of time it will take to undertake a particular task
- ▶ **It involves determining the amount of time a worker spends on various activities**
- ▶ It provides standard times for micro motions such as reach, move and release

Ref: Work Sampling is the statistical technique for determining the proportion of time spent by workers in various defined categories of activity.

http://en.wikipedia.org/wiki/Work_sampling#cite_note-Groover-0

Question No: 38 (Marks: 1) - Please choose one

Services differ from manufacturing in all the following ways EXCEPT:

- ▶ Customers typically interact directly with the service delivery process.
- ▶ Consumption and production take place simultaneously.
- ▶ Services are intangible.
- ▶ **Services can be stored**

Ref: service operations are different from manufacturing operations in terms of

- Tangible and intangible output
- customer consumption
- use of labor and equipment
- customer contact
- customer participation in conversion process

Note: Solve these papers by yourself

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- measuring activities and resources

http://wiki.answers.com/Q/How_do_service_operations_differ_from_manufacturing_operations

Question No: 39 (Marks: 1) - Please choose one

_____ purpose is to coordinate and control all the required sources so that productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control
- ▶ **Demand management**
- ▶ Forecasting
- ▶ Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvgP9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=true

Question No: 40 (Marks: 1) - Please choose one

Forecasting for groups tend to be more accurate than forecasting for individual items because:

- ▶ A group is composed of a number of items
- ▶ A group exhibits a uniform behavior
- ▶ **A group cancels the forecasting errors among items**
- ▶ A group behavior is relatively less uncertain

Ref: Forecasts more accurate for groups vs. individuals naturally because forecasting errors in a group tend to cancel out forecasting errors for individuals. (Handouts page No. 33)

Question No: 41 (Marks: 5)

Operations management does not work in isolation within an organization. How would you relate marketing, finance and other functions to operations function?

Functions with in an Organization

- The Operations function consists of all activities that are directly related to production of a good or service.
- Operations function exist in services like healthcare, Police, Traffic, transportation, consultancy, food handling, restaurants etc.
- Operations function forms the core of all businesses.

Operations and Marketing

- Value addition refers to conversion of raw materials to finished goods or services.

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- Value added often refers to the difference between the cost of the raw material and the price of the finished good.
- The revenues from selling goods is used in betterment of existing product or service or R &D, investment in new facilities and equipments
- Weeding out or eliminating non value adding operations. E.g. Storage of goods which have been produced ahead of scheduled production, increases storage and inventory costs. reducing storage cost would reduce transformation cost and thus increase value addition
- Marketing relates to selling of a good or service of the organization through advertising and pricing decisions.
- Marketing department assesses the customer's needs and communicate it to the operations people on short term and design people on the long term basis.
- Operations people need information about demand over a short range in order to purchase raw materials or manage inventory or schedule production plan where as the design people need information to redesign or simply sign new products or services.
- Marketing provides valuable information about the competitors customers needs and communicate it to the operations people on short term and design people on the long term basis.

Finance

- The finance function focuses on activities that relate to securing resources at favorable prices and then allocating these resources through out the organization.
- Finance and Operation Personnel exchange information and expertise in the following way
- Budgets
- Economic analysis of investment proposal
- Provision of funds

Question No: 42 (Marks: 5)

Suppose you want to estimate the time required to perform a certain task by the two employees. One employee's study yielded a mean of 6.4 minutes and standard deviation of 2.1 minutes with 95% confidence Interval. Other employee's study yielded a mean of 2.1 minutes and standard deviation of 6.4 minutes with confidence interval of 95%. Now how many observations you will need if desired maximum error is 10% of sample mean? ($z = 1.96$) Do both the employees have same number of observations?

Employee # 1:

Mean time = $\bar{X} = 6.4$ mins

Standard Deviation = $S = 2.1$ min.

$z = 1.96$

Error = $A = 10\% = 0.1$

$n = (zs/\bar{x})^2$

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$$\begin{aligned} &= [(1.96) (2.1) / (0.1) (6.4)]^2 \\ &= [4.116 / 0.64]^2 \\ &= (6.43125)^2 \\ &= 41.36 \end{aligned}$$

41 observations

Employee # 2:

Mean time = $\bar{X}$ = 2.1mints

Standard Deviation = S = 6.4mint.

$z = 1.96$

Error = $A = 10\% = 0.1$

$$n = (zs/ax)^2$$

$$= [(1.96) (6.4) / (0.1) (2.1)]^2$$

$$= [12.544 / 0.21]^2$$

$$= (59.733)^2$$

$$= 3568.03$$

3568 observations

Paper No. 07

MIDTERM EXAMINATION

Fall 2010

MGT613- Production / Operations Management (Session - 2)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Who developed the use of standardization in large-scale mass production using a moving assembly line?

- ▶ Frederick Winslow Taylor
- ▶ Frank Gilbreth
- ▶ Adam Smith
- ▶ **Henry Ford**

Ref: Mass production (also called **flow production**, **repetitive flow production**, **series production**, or **serial production**) is the production of large amounts of standardized products, including and especially on assembly lines. Mass production was popularized in the 1910s and 1920s by Henry Ford's Ford Motor Company, which introduced electric motors to the then-well-known technique of chain or sequential production.

http://en.wikipedia.org/wiki/Mass_production

OR

[http://highered.mcgraw-](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html)

[hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html) (See the

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Question No. 05)

Question No: 2 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per shift?

- ▶ Capital
- ▶ Energy
- ▶ **Labor**
- ▶ Machine

Ref: Labor Productivity:

- Units of output per labor hour
- Units of output per shift
- Value-added per labor hour (Handouts Page No. 19)

Question No: 3 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per dollar input?

- ▶ **Capital**
- ▶ Energy
- ▶ Labor
- ▶ Machine

Ref: Capital Productivity

Units of output per Rs. input

Dollar value of output per Rs. Input (Handouts Page No. 19)

Question No: 4 (Marks: 1) - Please choose one

Which one of the following is a measure of productivity that involves measuring inputs and outputs using a common unit of measurement?

- ▶ **Multifactor**
- ▶ Partial
- ▶ Single
- ▶ Total

Ref: Calculations of multifactor productivity measure inputs and outputs using a common unit of measurement, such as cost. For instance, the measure might use cost of inputs and units of the output:

http://docs.google.com/viewer?a=v&q=cache:bYWPp-Ig99IJ:highered.mcgraw-hill.com/sites/dl/free/0073525251/886181/stevenson11e_sample_ch02.pdf+Multifactor+is+a+measure+of+productivity+that+involves+measuring+inputs+and+outputs+using+a+common+unit+of+measurement&hl=en&gl=pk&pid=bl&srcid=ADGEEShIkJnaEXjh-LIA3HACWDXOFhSy4GxPv8YQXZJIU3WT0go2JJj8vnbbzyuq3hxydg1DjvPnqXn6l7_WK80EPnN15OYu_iNw-luxMf0zGIxME7Z2JTjx1YPoSJERrLKF0cWbvkXb&sig=AHIEtbTWWf1ESOM052Hrkqk5mCU24fLbQA

Question No: 5 (Marks: 1) - Please choose one

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What would be the productivity if 9 workers installed 650 square yards of carpeting in 6 hours?

- ▶ **12.03 square yards/hr**
- ▶ 72.20 square yards/hr
- ▶ 108.30 square yards/hr
- ▶ 5850 square yards/hr

Ref: Productivity = Output Quantity / Input Quantity

$$\text{Productivity} = 650 / (9 * 6)$$

$$\text{Productivity} = 650/54 = \mathbf{12.03 \text{ Square yards}}$$

Question No: 6 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute value?

- ▶ (Quality + Speed – Flexibility) / Cost
- ▶ **(Quality + Speed+ Flexibility) / Cost**
- ▶ (Quality + Speed - Cost) / Flexibility
- ▶ (Quality + Speed+ Cost) / Flexibility

Ref: Value= Performance/Cost= (Quality +Speed+ Flexibility)/Cost

(Handouts page No. 10)

Question No: 7 (Marks: 1) - Please choose one

All of the following are examples of quantitative forecasting EXCEPT:

- ▶ **Delphi method**
- ▶ Time series analysis
- ▶ Associative models
- ▶ Naïve forecasting

Ref: <http://www.slideshare.net/knksmart/forecasting-slides> (See the Slide No. 14)

Question No: 9 (Marks: 1) - Please choose one

Which one of the following is a limitation of a moving average having a trend?

- ▶ **The forecast lags behind the actual**
- ▶ The forecast represents demand more accurately
- ▶ The forecast will not be accurate
- ▶ The forecast will not be reliable

Ref: If, over several periods, a time series shows a change in the average value which corresponds to the trend model, the forecast values always lag behind the actual values by one or several periods in the first-order exponential smoothing procedure.
http://help.sap.com/saphelp_45b/helpdata/en/a5/6320e843a211d189410000e829fbbd/content.htm

Question No: 10 (Marks: 1) - Please choose one

Which one of the following is an index used to measure actual output relative to design capacity?

- ▶ Efficiency

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- ▶ Effective capacity
- ▶ Effectiveness
- ▶ **Utilization**

Ref: It can be expressed as a ratio, where utilization = actual output divided by design capacity. This measure is used in both capacity planning and capacity requirements planning processes. <http://www.bnet.com/topics/capacity+utilization>

Question No: 11 (Marks: 1) - Please choose one

What would be the utilization, if 34 cars are produced in a day with a design capacity of 50 cars per day?

- ▶ **68%**
- ▶ 1.47%
- ▶ 84%
- ▶ 16%

Ref: Utilization = Actual Capacity / Design Capacity * 100

$$\text{Utilization} = 34 / 50 * 100 = 68\%$$

Question No: 12 (Marks: 1) - Please choose one

Which one of the following stages of product life cycle relates to more predictable behavior in terms of capacity requirements?

- ▶ Introduction
- ▶ Growth
- ▶ **Maturity**
- ▶ Decline

Ref: Maturity Stage. As the products of firms move into the maturity stage, attracting highly skilled individuals is no longer as high a priority. Firms in the mature stage have an extensive internal labour market and extensive training and development programs. Firms in this stage may pay high wages to retain skilled talent. Economic downturns are handled by employee layoffs. Conflict resolutions and due process under collective bargaining are the grievance procedures with third party arbitration (Kochan & Chalykoff, 1985). **The environment (customer demand and competitors) becomes more stable and predictable (but as competitive) in comparison with the growth stage.**

<http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sjacksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=en&gl=pk&pid=bl&srcid=ADGEESigJYxwqHconGqfCMjw0LjJ83rXBJuDpDj9ii07-2VUwmVTBF6K-Xm7xu1THfTijPxrsbqKJD0KKZziOIaotlvC4pPqcwxZ2J3KdX3QIQo8iw3VCTRAsg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMlRvbg>

Question No: 13 (Marks: 1) - Please choose one

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Which one of the following layout types is associated with car assembly?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ **Product layout**
- ▶ Hybrid layout

Ref: Product – Layout should suit to the nature of product and its method of production. I.e. aircraft manufacturing and car manufacturing layouts will be different. Sales also affect the layout. <http://www.scribd.com/doc/7369836/Facility-Layout>

Question No: 14 (Marks: 1) - Please choose one

Which of the following probability distribution is used most extensively in dealing with forecasting errors?

- ▶ **Normal**
- ▶ Exponential
- ▶ Beta
- ▶ Pareto

Ref: http://highered.mcgraw-hill.com/sites/0072443901/student_view0/chapter3/self_quiz_from_cd.html (See the Question No. 10)

Question No: 15 (Marks: 1) - Please choose one

Which one of the following is an application of simple exponential smoothing?

- ▶ Establishing durability
- ▶ Finding reliability
- ▶ **Scheduling services**
- ▶ Quality improvement

Question No: 16 (Marks: 1) - Please choose one

Which of the following forecasting technique is based on the assumption that past data is more indicative of the future than the most recent occurrences?

- ▶ **Exponential smoothing**
- ▶ Linear regression
- ▶ Judgmental forecast
- ▶ Naive forecast

Ref: In many applications (perhaps in most), the most recent occurrences are more indicative of the future than those in the more distant past. If this premise is valid – “that the importance of data diminishes as the past becomes more distant” - then exponential smoothing may be the most logical and easiest method to use. http://docs.google.com/viewer?a=v&q=cache:QTJvd6_zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+Exponential+smoothing+is+based+on+the+assumption+that+past+data+is+more+indicative+of+the+future+than+the+most+recent+occurrences&hl=en&gl=pk&pid=bl&srcid=ADGEEsg3c6cLEJGxFAeYDJmynagPFzwnMlzbF5wpI0nxIgJ8Kn

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R5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-
BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEt
bTwalQd7sTFtecd46RVg72u_ZLEEG

Question No: 17 (Marks: 1) - Please choose one

Which of the following takes into consideration the design of aesthetics of the product?

- ▶ Functional design
- ▶ Production design
- ▶ Service design
- ▶ **Product design**

Ref: Product design (i.e., industrial design) is perhaps most associated with aesthetic considerations <http://www.acrwebsite.org/volumes/display.asp?id=7824>

Question No: 18 (Marks: 1) - Please choose one

Which one of the following is the overall objective of product and service design?

- ▶ Customer satisfaction and variety
- ▶ **Customer satisfaction and profitability**
- ▶ Reliability and variety
- ▶ Quality and reliability

Ref: <http://www.docstoc.com/docs/19583340/Chapter-4-product-and-service-designppt>
(See the Slide No. 14)

Question No: 19 (Marks: 1) - Please choose one

Which one of the following is the final stage of product life cycle?

- ▶ Growth
- ▶ **Decline**
- ▶ Maturity
- ▶ Planning

Ref: The final stage in the life cycle is the decline.
<http://www.davetalks.com/articles/who-wants-live-forever.html>

Question No: 20 (Marks: 1) - Please choose one

Which one of the following is the goal of method analysis?

- ▶ **Dividing and analyzing a job**
- ▶ Check individual human motions used to perform an operation
- ▶ Determining the length of time it will take to undertake a particular task
- ▶ Determining the amount of time a worker spends on various activities

Ref: Design of Work Systems is used to describe the two basic approaches to job design.
(Handouts Page No. 87)

Question No: 21 (Marks: 1) - Please choose one

Which one of the following is the focus of predetermined motion time system?

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Question No: 24 (Marks: 1) - Please choose one

In which of the following approaches location decision is based on personal opinions and quantitative information?

► **Factor rating**

- Market area plant strategy
- Currency fluctuations
- Product plant strategy

Ref: Factor rating enables decision makers to incorporate their personal opinions and quantitative information in the decision process.

http://docs.google.com/viewer?a=v&q=cache:hle5jRN11yUJ:farfromneutral.com/kaizen/wp-content/uploads/web_location_planning.pdf+Factor+rating+enables+decision+makers+to+incorporate+their+personal+opinions+and+quantitative+information&hl=en&pid=bl&srcid=ADGEESh4_F-ZX_uWV4qLQb5LaqEt_hOyLPwunPeMA0DqFcHqiMAkZG5tmP74ZKXG2hqBvICBP_L8NehlKvFrgCCM5CtE1-Q1Y8WVDtcLK_Zr8sWybaKr67vdl4ZTIj5rdMy4CyfGqEiYl&sig=AHIEtbR8oCpDNOFTQM0UVhdYpJgMo34SgQ

Question No: 25 (Marks: 1) - Please choose one

Which one of the following is TRUE about the importance of capacity planning?

- It is profitable
- It increase the capacity of productive unit
- **It helps managers quantify production capability**
- It establishes good relationship with the customer

Ref: The operating unit might be a plant, department, machine, store, or worker. The capacity of an operating unit is an important piece of information for planning purposes: It enables managers to quantify production capability in terms of inputs or outputs, and thereby make other decisions or plans related to those quantities. The basic questions in capacity planning are the following:

1. What kind of capacity is needed?
2. How much is needed?
3. When is it needed?

http://docs.google.com/viewer?a=v&q=cache:XUm6ltzkqJwJ:amaiu.pbworks.com/f/ABI301%2BLecture%2BNote%2B%2BNo.%2B3.doc+capacity+planning+helps+managers+quantify+production+capability&hl=en&pid=bl&srcid=ADGEESgdFdpntlZr3VP2j2fW79QGGS51GhPt0II2cZBZz6Na8bfUjBNDEB30R56MO7G2srDEW5gbqKE2ORdLy2rXBBcqsWedpL6ntC5Nd-Sso_COn_VnnbNA7Bgm_hGBkx-ptloKup&sig=AHIEtbS2U8M8uNEWGDLCOxGTMQFTS59NpQ

Question No: 26 (Marks: 1) - Please choose one

Organizational strategies relate to which of the following sets of factors?

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► **Survival, profitability, growth rate and market share**

- Profitability, survival, leads times and target market
- Quality, operating resources, growth rate and market share
- Scheduling, profitability, lead times and survival

Ref: Survival, profitability, Growth rate, market share (**Book Page/Slide No. 13**)

http://docs.google.com/viewer?a=v&q=cache:bYWPslg99IJ:highered.mcgraw-hill.com/sites/dl/free/0073525251/886181/stevenson11e_sample_ch02.pdf+Organizational+strategies+relate+to+which+of+the+following+sets+of+factors?+%E2%96%BA+Survival,+profitability,+growth+rate+and+market+share+%E2%96%BAProfitability,+survival,+leads+times+and+target+market+%E2%96%BAQuality,+operating+resources,+growth+rate+and+market+share+%E2%96%BAScheduling,+profitability,+lead+times+and+survival&hl=en&gl=pk&pid=bl&srcid=ADGEEShIkJnaEXjh-LIA3HACWDXOFhSy4GxPv8YQXZJIU3WT0go2JJj8vnbbzyuq3hxydg1DjvPnqXn6l7_WK80EPHN15OYu_iNw-luxMf0zGIxME7Z2JTjx1YPoSJERrLKF0cWbvkXb&sig=AHIEtbRBvXb8MDQZrhUT8qmH-CP_4ToLlw&pli=1

Question No: 27 (Marks: 1) - Please choose one

Which one of the following forecasting methods uses subjective inputs such as opinions from consumer surveys, sales staff, managers and experts?

- Time series model
- Least Square method
- **Judgmental forecasting model**
- Associative forecasting model

Ref: Judgmental - uses subjective inputs meaning that a judgmental forecast rely on analysis of subjective inputs obtained from various sources, such as consumer surveys, the sales staff, managers and executives, and panels of experts. These insights are not available publicly. (**Handouts Page No. 35**)

Question No: 28 (Marks: 1) - Please choose one

Transportation method helps in solving which of the following problems?

- **Facility location problems**
- Allocation of cost problems
- Workforce management problems
- Unfamiliar laws and regulations problems

Ref: Transportation Method is a quantitative approach that can help solve multiple facility location problems. (**Handouts Page No. 98**)

Paper No. 08

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MIDTERM EXAMINATION
Spring 2009

MGT613- Production / Operations Management (Session - 1)
Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Which ONE of the following statements correctly explains the role of operation's manager?

- ▶ To coordinate the activities between marketing and finance department
- ▶ To sustain, protect and project the company's long term strategies
- ▶ To develop organizational strategy that reflects the operational strategy
- ▶ **To sustain, protect and project the company's operation/production side**

Ref: Whether profit or non profit, the role of an OPERATIONS MANAGER is to sustain, protect, and project the company's operations side. (Handouts Page No. 01)

Question No: 2 (Marks: 1) - Please choose one

What would be the productivity if a machine produced 50 units in 3 hours?

- ▶ 0.066 units per hr
- ▶ **16.66 units per hr**
- ▶ 6.766 units per hr
- ▶ 60.66 units per hr

Ref: Productivity is a measure of the effective use of resources, usually expressed as the ratio of output to input .Also called Efficiency at times

Productivity = Units Produced / Hours

Productivity = 50 / 3 = 16.66 per hour

Question No: 3 (Marks: 1) - Please choose one

Operations manager is responsible for all of the following EXCEPT:

- ▶ Forecasting
- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Distributing organizations' goods**

Ref: Operations Managers job responsibility includes but is not limited to:

- Forecasting
 - Capacity planning
 - Scheduling
 - Inventory Management
 - Quality Assurance and Control
 - Motivating employees
 - Deciding where to locate facilities
- (Handouts Page No. 03)**

Question No: 4 (Marks: 1) - Please choose one

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Which one of the following formulae can be used to compute value?

- ▶ (Quality + Speed – Flexibility) / Cost
- ▶ **(Quality + Speed+ Flexibility) / Cost**
- ▶ (Quality + Speed - Cost) / Flexibility
- ▶ (Quality + Speed+ Cost) / Flexibility

Ref: Value= Performance/Cost= (Quality +Speed+ Flexibility)/Cost
(Handouts page No. 10)

Question No: 5 (Marks: 1) - Please choose one

Which one the following formula or function can be used to measure the performance?

- ▶ Flexibility + profit+ operations
- ▶ Work + profit + value
- ▶ **Quality + speed + flexibility**
- ▶ Profit + Incentives + standards

Ref: Value= Performance/Cost= (Quality +Speed+ Flexibility)/Cost
(Handouts page No. 10)

Question No: 6 (Marks: 1) – Please choose one

Organizational strategies relate to which of the following sets of factors?

- ▶ **Survival, profitability, growth rate and market share**
- ▶ Profitability, survival, leads times and target market
- ▶ Quality, operating resources, growth rate and market share
- ▶ Scheduling, profitability, lead times and survival

Ref: Survival, profitability, Growth rate, market share (Book Page/Slide No. 13)

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Question No: 7 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

- ▶ A factor which may be significant in other parts of the organization
- ▶ **A factor which gives an organization a competitive edge**
- ▶ A factor which serves as a minimum standard for purchase
- ▶ A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to

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be perceived as better than the competitor's services. (Handouts Page No. 15)

Question No: 8 (Marks: 1) - Please choose one

To make operations strategy effective it should be:

- ▶ Independent of the organization's strategy
- ▶ **Consistent with the organization's strategy**
- ▶ Developed by a first line manager
- ▶ Independent of time dimension

Ref: Operations strategy – The approach, consistent with organization strategy that is used to guide the operations function. We first study strategy design process with example for manufacturing and Services. (Handouts Page No. 14)

Question No: 9 (Marks: 1) - Please choose one

Which one of the following correctly explains the elements of a good forecast?

- ▶ Timely, having a purpose, accurate, written, reliable, meaningful
- ▶ Timely, accurate, judgmental, correctness, verbal, simple to use
- ▶ **Timely, accurate, reliable, meaningful, written, simple to use**
- ▶ Timely, accurate, reliable, consistent, meaningful, written, simple to use

Ref: Requirements of a Good Forecast

- Timely
- Reliable
- Accuracy.
- Meaningful
- Written/Documented.
- Simple (Handouts Page No. 34)

Question No: 10 (Marks: 1) - Please choose one

Which one of the following correctly explains the qualitative forecasting technique?

- ▶ It consists mainly of numerical descriptions and defies subjective inputs of managers.
- ▶ It consists mainly of subjective inputs and defies particular numerical descriptions
- ▶ **It consists mainly of subjective inputs and defies human factor, personal opinions.**
- ▶ It consists mainly of analyzing objective and hard data and defies human factor, opinion.

Ref: Qualitative Techniques which use subjective inputs and no numerical data. It relies solely on soft information like human factors, personal opinion, hunches. Thus Qualitative Forecasts are often biased and tilted towards what the management wants to predict. (Handouts Page No. 34)

Question No: 11 (Marks: 1) - Please choose one

Which one of the following correctly explains the quantitative forecasting technique?

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► It consists mainly of numerical descriptions and resist subjective inputs of managers.

► It consists mainly of subjective inputs and resist particular numerical descriptions.

► It consists mainly of subjective inputs and resist human factor, personal opinions.

► It consists mainly of analyzing objectives and hard data and resist human factor, opinion.

Ref: Quantitative research focuses on numbers or quantities. Quantitative studies have results that are based on numeric analysis and statistics. Often, these studies have many participants. It is not unusual for there to be over a thousand people in a quantitative research study. It is ideal to have a large number of participants because this gives analysis more statistical power.

http://www.associatedcontent.com/article/1622269/what_is_the_difference_between_qualitative.html

Question No: 12 (Marks: 1) - Please choose one

Which one of the following forecasting techniques uses explanatory variables to predict future demand?

► **Associative forecast**

► Time series forecast

► Consumer survey

► Executive opinion

Ref: Associative Models: forecasting technique that uses explanatory variables to predict future demand. <http://cramberry.net/sets/26728-operational-management-3>

Question No: 13 (Marks: 1) - Please choose one

Given the table:

Alternatives Possible future demand

	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000
Large facility	18,000	15,000

Which one of the following is the correct payoff under MAXIMAX approach?

► Rs. 10,000

► Rs. 18,000

► **Rs. 20,000**

► Rs. 32,000

Ref: Choose the Best maximum Value for MAXIMAX approach.

Question No: 14 (Marks: 1) - Please choose one

Which one of the following is a limitation of a moving average having a trend?

► **The forecast lags behind the actual**

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- ▶ The forecast represents demand more accurately
- ▶ The forecast will not be accurate
- ▶ The forecast will not be reliable

Ref: If, over several periods, a time series shows a change in the average value which corresponds to the trend model, the forecast values always lag behind the actual values by one or several periods in the first-order exponential smoothing procedure.
http://help.sap.com/saphelp_45b/helpdata/en/a5/6320e843a211d189410000e829fbbd/content.htm

Question No: 15 (Marks: 1) - Please choose one

Which one of the following is an index used to measure actual output relative to design capacity?

- ▶ Efficiency
- ▶ Effective capacity
- ▶ Effectiveness
- ▶ **Utilization**

Ref: It can be expressed as a ratio, where utilization = actual output divided by design capacity. This measure is used in both capacity planning and capacity requirements planning processes. <http://www.bnet.com/topics/capacity+utilization>

Question No: 16 (Marks: 1) - Please choose one

Which one of the following mathematical expressions is used to compute utilization?

- ▶ Actual output / effective capacity
- ▶ **Actual output / design capacity**
- ▶ Actual output + effective capacity
- ▶ Actual output – design capacity

Ref: For example:

Actual Output = 36 units / day

Design Capacity = 50 units / day

Utilization = $36/50 * 100 = 72\%$ (Handouts Page No. 66)

Question No: 17 (Marks: 1) - Please choose one

Which one of the following stages of product life cycle relates to more predictable behavior in terms of capacity requirements?

- ▶ Introduction
- ▶ Growth
- ▶ **Maturity**
- ▶ Decline

Ref: Maturity Stage. As the products of firms move into the maturity stage, attracting highly skilled individuals is no longer as high a priority. Firms in the mature stage have an extensive internal labour market and extensive training and development programs. Firms in this stage may pay high wages to retain skilled talent. Economic downturns are handled by employee layoffs. Conflict resolutions and due process under collective

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bargaining are the grievance procedures with third party arbitration (Kochan & Chalykoff, 1985). **The environment (customer demand and competitors) becomes more stable and predictable (but as competitive) in comparison with the growth stage.**

<http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sjacksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=en&gl=pk&pid=bl&srcid=ADGEESigJYxwqHconGqfCMjw0LjJ83rXBJuDPDj9ii07-2VUwmVTBF6K-Xm7xu1THfTijPxrsbqKJD0KKZziOIaotlvC4pPqcwxZ2J3KdX3QIQo8iw3VCTRAsXg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMIRvbg>

Question No: 18 (Marks: 1) - Please choose one

Which one of the following statement is TRUE about cost-volume relationship?

- ▶ **It represents the relationship between cost, revenue and volume of output.**
- ▶ It represents the relationship between cost and volume of output.
- ▶ It represents the relationship between cost and revenue.
- ▶ It represents the relationship between inputs, cost and volume of output.

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. (Handouts Page No. 73)

Question No: 19 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute break even point?

- ▶ $Q = VC / (R - VC)$
- ▶ **$Q = FC / (R - VC)$**
- ▶ $Q = VC / (R + FC)$
- ▶ $Q = FC / (R + VC)$

Ref: $QBEP = FC / (R - VC)$ (Handouts Page No. 76)

Question No: 20 (Marks: 1) - Please choose one

Which one of the following is a characteristic of continuous process?

- ▶ High lead times
- ▶ Short process times
- ▶ The ability to handle high variety
- ▶ **The ability to handle high volumes**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4472/1144864.cw/index.htm
(In Multiple Choice Questions See the Question No. 11)

Question No: 21 (Marks: 1) - Please choose one

Which of the following refers the way an organization chooses to produce its good or services?

- ▶ **Process selection**

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- ▶ Process reengineering
- ▶ Process redesign
- ▶ Process design

Ref: Process Selection refers to the way an organization chooses to produce its good or services. (Handouts Page No. 77)

Question No: 22 (Marks: 1) - Please choose one

Which one of the following best describes the cellular layout?

- ▶ It groups machines into departments according to their function.
- ▶ **It groups machines into small assembly lines that produce families of parts.**
- ▶ It allows production of larger lots by reducing set-up time.
- ▶ It encourages the use of large, efficient machinery.

Ref: <http://cw.prenhall.com/bookbind/pubbooks/russell/chapter7/multiple1/deluxe-content.html> (See the Question No. 03)

Question No: 23 (Marks: 1) - Please choose one

Which one of the following statements is NOT correct about cycle time?

- ▶ It represents daily operating time divided by desired production
- ▶ It is the maximum allowable time at each work station
- ▶ It determines the time often items take to roll off in assembly line
- ▶ **It is the time required to complete a product from start to finish**

Ref: The cycle time is **not** the time required to complete a product from start to finish. This value would be the cycle time multiplied by the number of workstations. <http://www.cbpa.ewu.edu/~pnemetzmills/OMch5/pracanswers.html> (See the Question No. 02)

Question No: 24 (Marks: 1) - Please choose one

Which of the following layout types is associated with a supermarket?

- ▶ Fixed position layout
- ▶ **Process layout**
- ▶ Product layout
- ▶ Cellular layout

Ref: Supermarket layouts are essentially process layouts, http://docs.google.com/viewer?a=v&q=cache:ISjqXnqJinsJ:hkilter.com/courses/541/isl541_06.ppt+Which+of+the+following+layout+types+is+associated+with+a+supermarket%3F+%E2%96%BAFixed+position+layout+%E2%96%BAProcess+layout+%E2%96%BAProduct+layout+%E2%96%BACellular+layout&hl=en&gl=pk&pid=bl&srcid=ADGEESgjL0-us6bizOKeoG1FGkiYM86aIVo2pXsLNVhz2QCo4kalE27S2tQ6SGYrSzkeJHrBPIQd8zLHJm81nlwYCUNOvk8tSFyigfDzc4g8VsRZepfWBN0HTMjj8J8Fghtf50D4L0VW&sig=AHIEtbTxrTJMumkozSV9o2BjZrPMqDx2HQ

Question No: 25 (Marks: 1) - Please choose one

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What would be the required cycle time for a process that operates 9 hours daily with a desired output of 300 units per day?

- ▶ 0.03 minutes
- ▶ **1.8 minutes**
- ▶ 2700 minutes
- ▶ 291 minutes

Ref: $CT = \text{Time Cycle} = \text{Operating Time} / \text{Desire Output}$

$CT = \text{Time Cycle} = 9 * 60 / 300 = \mathbf{1.8 \text{ minutes}}$

Question No: 26 (Marks: 1) - Please choose one

Which one of the following defines the range of the smoothing constant (Alpha)?

- ▶ 2 and -2
- ▶ 1 and -1
- ▶ 0 and -1
- ▶ **0 and 1**

Ref: alpha - the smoothing constant to use for this exponential smoothing model. Must be a value in the range 0.0 - 1.0 Values above 0.5 is uncommon - though they are still valid and are supported by this implementation.

<http://openforecast.sourceforge.net/docs/net/sourceforge/openforecast/models/TripleExponentialSmoothingModel.html>

Question No: 27 (Marks: 1) - Please choose one

Which of the following takes into consideration the design of aesthetics of the product?

- ▶ Functional design
- ▶ Production design
- ▶ Service design
- ▶ **Product design**

Ref: Product design (i.e., industrial design) is perhaps most associated with aesthetic considerations <http://www.acrwebsite.org/volumes/display.asp?id=7824>

Question No: 28 (Marks: 1) - Please choose one

Which one of the following refers to using some of the components of old products in the manufacturing of new products?

- ▶ Manufacturability
- ▶ **Remanufacturing**
- ▶ Robust design
- ▶ Automation

Ref: Design for Remanufacturing: Using some of the components of the old products in the manufacture of new products. **(Handouts Page No. 51)**

Question No: 29 (Marks: 1) - Please choose one

Which one of the following mathematical expressions can be used to compute availability?

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▶ **(MTBF) / (MTBF+MTR)**

▶ (MTBF) / (MTBF-MTR)

▶ (MTR) / (MTBF+MTR)

▶ (MTR) / (MTBF-MTR)

Ref: Availability = (MTBF) / (MTBF + MTR) (Handouts Page No. 63)

Question No: 30 (Marks: 1) - Please choose one

Which one of the following is correct about the range of availability on a measuring index?

▶ 0.1 to 1.0

▶ **0 to 1.0**

▶ 0.5 to 1.0

▶ 0.01 to 1.0

Ref:

http://books.google.com.pk/books?id=818wT_TGJgAC&pg=PA23&lpg=PA23&dq=index+range+from+0+to+1.0&source=bl&ots=swmbQfISvn&sig=Nj0_bfiYtEEwwonlQAMYUkWh0Bw&hl=en&ei=fU-4Tf7SLM-xhAeY6rSADw&sa=X&oi=book_result&ct=result&resnum=7&ved=0CD8Q6AEwBjgK#v=onepage&q=index%20range%20from%200%20to%201.0&f=false

Question No: 31 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 300 hours between repairs, and the mean repair time is expected to be 2 hours?

▶ 6.02

▶ 2.0

▶ **0.99**

▶ 0.006

Ref: Availability = (MTBF) / (MTBF + MTR)

MTBF = Mean time between factor =300

MTR = Mean repair time =2 hours

Availability = (300) / (300+2)

Availability =300 / 302

Availability = 0.99

Question No: 32 (Marks: 1) - Please choose one

Which one of the following operating levels is best with respect to capacity?

▶ The maximum point of the cost curve

▶ **The level of capacity for which average unit cost is minimized**

▶ The level of capacity for which average unit cost is maximized

▶ The level of capacity for which total cost is minimized

Ref:

<http://books.google.com.pk/books?id=kNRkTmMCXDSC&pg=PA463&lpg=PA463&dq=The+level+of+capacity+for+which+average+unit+cost+is+minimized&source=bl&ots=>

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mpafxu7HT9&sig=_yoCzNASj3gkyoRU0465QpSnOMw&hl=en&ei=Q91zTeinKMbxrQegneXTAQ&sa=X&oi=book_result&ct=result&resnum=2&ved=0CB4Q6AEwAQ#v=onepage&q=The%20level%20of%20capacity%20for%20which%20average%20unit%20cost%20is%20minimized&f=false

Question No: 33 (Marks: 1) - Please choose one

Which one of the following is the goal of work sampling?

- ▶ Individual human motions that are used in a job task
- ▶ Determining the length of time it will take to undertake a particular task
- ▶ **Determining the amount of time a worker spends on various activities**
- ▶ Specifying the content and methods to perform a job

Ref:

http://books.google.com.pk/books?id=B5j4D0U6QA0C&pg=PA127&lpg=PA127&dq=Determining+the+amount+of+time+a+worker+spends+on+various+activities&source=bl&ots=geHI2-3mR0&sig=eqWNikcpWGAHCSZtR7taWats1Dc&hl=en&ei=tvb-S8S2DpSh_Abt1pimCw&sa=X&oi=book_result&ct=result&resnum=10&ved=0CEQQ6AEwCQ#v=onepage&q&f=false (See the Activity Sampling Second Paragraph)

Question No: 34 (Marks: 1) - Please choose one

The advantages of specialization to management include all of the following EXCEPT:

- ▶ Rapid training of the workforce
- ▶ Ease in recruiting new workers
- ▶ **Fewer turnovers**
- ▶ Less boredom for workers

Ref:

http://books.google.com.pk/books?id=d3eREcsD35sC&pg=PA224&lpg=PA224&dq=Advantages+of+specialization+To+management+1+Rapid+training+of+the+work+force+2.+Ease+in+recruiting+new+workers+3.+High+output+due+to+simple+and+repetitive+work&source=bl&ots=R5XoCdpcdb&sig=H_j0m4evxgrOj_nOQ9b65cT3pg8&hl=en&ei=kwi3TbT0J8HU4wbg4aD_Dw&sa=X&oi=book_result&ct=result&resnum=2&ved=0CBgQ6AEwAQ#v=onepage&q&f=false

Question No: 35 (Marks: 1) - Please choose one

The disadvantages of specialization to management include all of the following EXCEPT:

- ▶ More absenteeism
- ▶ Minimum responsibility
- ▶ More turnover
- ▶ **More difficult to teach the job**

Ref: [http://higherred.mcgraw-](http://higherred.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html)

[hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html](http://higherred.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html) (See the Question No. 06)

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Question No: 36 (Marks: 1) - Please choose one

Which one of the following is NOT a business application of forecasting?

- ▶ Budgeting
- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Quality control**

Ref: Forecasting in business forms the basis for budgeting and planning for capacity, sales, production, inventory, manpower, purchasing and more. (Handouts Page No. 31)

Question No: 37 (Marks: 1) - Please choose one

Services differ from manufacturing in all the following ways EXCEPT:

- ▶ Customers typically interact directly with the service delivery process.
- ▶ Consumption and production take place simultaneously.
- ▶ Services are intangible.
- ▶ **Services can be stored**

Ref: service operations are different from manufacturing operations in terms of

- Tangible and intangible output
- customer consumption
- use of labor and equipment
- customer contact
- customer participation in conversion process
- measuring activities and resources

http://wiki.answers.com/Q/How_do_service_operations_differ_from_manufacturing_operations

Question No: 38 (Marks: 1) - Please choose one

All of the following are examples of the transformation process EXCEPT:

- ▶ Cutting
- ▶ Packing
- ▶ **Facilitating**
- ▶ Labeling

Ref: Examples of Transforming process and input in Food Processor:

Inputs

Raw vegetables
Metal sheets
Water
Energy
Labor
Building
Equipment

Process

cleaning
Making cans
Making cans
Cutting
Cooking
Packing
Labeling

http://docs.google.com/viewer?a=v&q=cache:27Zjwa-o6_kJ:highered.mcgraw-hill.com/sites/dl/free/0070951675/436573/samplech01.pdf+examples+of+the+transformation+process+are+Cutting+%E2%96%BA+Packing+%E2%96%BA+Facilitating+%E2%96%BA

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96%BA+Labeling&hl=en&pid=bl&srcid=ADGEESi98aGPPXv5w0w-VBGRprednU-ENzzYtfDBdUfcf5sT5vBu0th2m1l74tG1Qt4oZOb-Fa69OEDb-QWocDFhQvspN6W9p8LqyxNvDaLoKOWUVy-rmCYeoSCBOUclepGwcQPLn7s&sig=AHIEtbQ8kba9NbTRC4loArQHIWN-H50AoQ

Question No: 39 (Marks: 1) - Please choose one

Which one of the following represents the series of a time forecast?

- ▶ Averaging, cycle, seasonality, random variations
- ▶ Trend, seasonality, exponential smoothing
- ▶ Trend, cycle, seasonality, moving average
- ▶ **Trend, cycle, seasonality, random variations**

Ref:

http://books.google.com/books?id=8JM6wU_sBc0C&pg=PA144&dq=Which+one+of+the+following+represents+the+series+of+a+time+forecast?+*****+Averaging#+v=onepage&q&f=false

Question No: 40 (Marks: 1) - Please choose one

Which of the following is a characteristic of linear regression?

- ▶ It is superior to a moving average
- ▶ **It is a causal forecasting model**
- ▶ It compensates for both trend and seasonal variations in demand
- ▶ It is superior to an exponential smoothing

Ref: Linear regression is used both for time series forecasting and for casual relationship forecasting. When the dependent variable (usually the vertical axis on the graph) changes as a result of time (plotted on the horizontal axis), it is time series analysis. When the dependent variable changes because of the change in another variable, this is a casual relationship (such as the demand of cold drinks increasing with the temperature).

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+linear+regression+compensates+for+both+trend+and+seasonal+variations+in+demand&hl=en&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMllzbF5wpI0nxIgj8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEtbQweGQ9quetmEqfenwFdiUUE2eZeg

Question No: 41 (Marks: 5)

Suppose you are working as an operation manager in an automobile company. Your company wants to move its manufacturing plant from one location to other location. What factors will affect the location decision according to your point of view?

Factors Affecting Location Decisions

The process of determining a geographic site for firms operations takes into account both manufacturing and marketing aspects. We just focus on the manufacturing aspects as it's more closely related to Operations Management

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Manufacturing

- Favorable Labor Climate
- Proximity to markets.
- Quality of Life
- Proximity of Suppliers and Resources.
- Proximity to the Parent Company's facilities.
- Utilities, Taxes and Real estate costs.
- Other factors (expansion, construction costs, and location near the highway or main railways)

Question No: 42 (Marks: 5)

Calculate the exponential smoothing forecasts from the following data for the 6th period with constant (alpha) 0.40.

Period No. of complaints

1	60
2	65
3	55
4	58
5	64

FORMULAE: $F_t = F_{t-1} + a (A_{t-1} - F_{t-1})$

F_t = Coming timer period forecasting value

F_{t-1} = 1 Past time forecasting value

a = Alpha Smoothing constant

A_{t-1} = 1 Past time actual occurrence

At Period 1:

$$F_t = F_{t-1} + a (A_{t-1} - F_{t-1})$$

$$F_t = 60 + 0.40 (0)$$

$$F_t = 60$$

At Period 02:

$$F_t = F_{t-1} + a (A_{t-1} - F_{t-1})$$

$$F_t = 60 + 0.40 (60 - 60)$$

$$F_t = 60 + 0.40 (0)$$

$$F_t = 60$$

At Period 03:

$$F_t = F_{t-1} + a (A_{t-1} - F_{t-1})$$

$$F_t = 60 + 0.40 (65 - 60)$$

$$F_t = 60 + 0.40 (5)$$

$$F_t = 60 + 2$$

$$F_t = 62$$

At Period 04:

$$F_t = F_{t-1} + a (A_{t-1} - F_{t-1})$$

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$$F_t = 62 + 0.40 (55 - 62)$$

$$F_t = 62 + 0.40 (-7)$$

$$F_t = 62 - 2.8$$

$$F_t = 59.2$$

At Period 05:

$$F_t = F_t - 1 + a (A_{t-1} - F_{t-1})$$

$$F_t = 59.2 + 0.40 (58 - 59.2)$$

$$F_t = 59.2 + 0.40 (-0.48)$$

$$F_t = 59.2 - 0.192$$

$$F_t = 59.008$$

At Period 06:

$$F_t = F_t - 1 + a (A_{t-1} - F_{t-1})$$

$$F_t = 59.008 + 0.40 (64 - 59.008)$$

$$F_t = 59.008 + 0.40 (4.992)$$

$$F_t = 59.008 + 1.9968$$

$$F_t = 61.0048$$

Paper No. 09

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 2)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Within the operations function, which one of the following is a long-term management decision?

- ▶ Control decision
- ▶ Non-operational decision
- ▶ **Strategic decision**
- ▶ Tactical decision

Ref: Strategic Importance

1. Long term commitment/costs
 2. Impact on investments, revenues, and operations
 3. Supply chains
- (Handouts Page No. 95)

Question No: 2 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per dollar input?

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► **Capital**

- Energy
- Labor
- Machine

Ref: Capital Productivity

Units of output per Rs. input

Dollar value of output per Rs. Input

(Handouts Page No. 19)

Question No: 3 (Marks: 1) - Please choose one

Which one of the following is a measure of productivity that involves measuring inputs and outputs using a common unit of measurement?

► **Multifactor**

- Partial
- Single
- Total

Ref: Calculations of multifactor productivity measure inputs and outputs using a common unit of measurement, such as cost. For instance, the measure might use cost of inputs and units of the output:

http://docs.google.com/viewer?a=v&q=cache:bYWP5-Ig99IJ:highered.mcgraw-hill.com/sites/dl/free/0073525251/886181/stevenson11e_sample_ch02.pdf+Multifactor+inputs+and+outputs+using+a+common+unit+of+measurement&hl=en&gl=pk&pid=bl&srcid=ADGEEShIkJnaEXjh-LIA3HACWDXOFhSy4GxPv8YQXZJlU3WT0go2JJj8vnbbzyuq3hxydg1DjvPnqXn6l7_WK80EPPhN15OYu_iNw-luxMf0zGIxME7Z2JTjx1YPoSJERrLKF0cWbvkXb&sig=AHIEtbTWWf1ESOM052Hrkqk5mCU24fLbQA

Question No: 4 (Marks: 1) - Please choose one

The major business function consisting of research and development, product design, manufacturing, marketing, distribution, and customer service is refers to:

- Value chain
- The transformation process
- Quality control

► **Life cycle**

Ref:

<http://books.google.com.pk/books?id=f5p17Sz5NLMC&pg=PA379&lpg=PA379&dq=of+research+and+development#v=onepage&q=of%20research%20and%20development&f=false>

Question No: 5 (Marks: 1) - Please choose one

A business process is a logical set of tasks or activities that:

- Are specific to the operations function
- Are specific to the marketing function

Note: Solve these papers by yourself

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► **Are interdependent with other processes**

- Have exactly the same performance measures for any process

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter5/multiple_choice_quiz.html

(See the Question No. 05)

Question No: 6 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute value?

- (Quality + Speed – Flexibility) / Cost
- **(Quality + Speed+ Flexibility) / Cost**
- (Quality + Speed - Cost) / Flexibility
- (Quality + Speed+ Cost) / Flexibility

Ref: $\text{Value} = \text{Performance} / \text{Cost} = (\text{Quality} + \text{Speed} + \text{Flexibility}) / \text{Cost}$
(Handouts page No. 10)

Question No: 7 (Marks: 1) - Please choose one

Which one the following formula or function can be used to measure the performance?

- Flexibility + profit+ operations
- Work + profit + value
- **Quality + speed + flexibility**
- Profit + Incentives + standards

Ref: $\text{Value} = \text{Performance} / \text{Cost} = (\text{Quality} + \text{Speed} + \text{Flexibility}) / \text{Cost}$
(Handouts page No. 10)

Question No: 8 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

- A factor which may be significant in other parts of the organization
- **A factor which gives an organization a competitive edge**
- A factor which serves as a minimum standard for purchase
- A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to be perceived as better than the competitor's services. (Handouts Page No. 15)

Question No: 9 (Marks: 1) - Please choose one

As a manager, you have defined the purpose of the forecasts. What should be the next step in forecasting process?

- Choose a forecasting technique.
- Determine the purpose of the forecast.
- **Set up a time horizon or a time limit.**
- Collect and analyze the appropriate data.

Ref: Steps in the Forecasting Process:

Note: Solve these papers by yourself

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- **Determine the purpose of the forecast:** meaning what is the purpose and when will it be required. This will provide the level of detail for resources required man, machine, time and capital.
- **Establish a time horizon:** We already know that as time increases the accuracy of the Forecast decreases.
- **Select a forecasting technique:** whether qualitative or quantitative
- **Gather and analyze the appropriate data:** It goes without saying that before a forecast can be delivered data is required. The closer the real life data more realistic would be the forecast. This may be the time when you would like to identify the important assumptions and suppositions.
- **Prepare the forecast:**
- **Monitor the forecast:** A forecast has to be closely monitored to determine whether it is fulfilling its basic purpose. This helps in re-examining the method, assumptions and validity of the data and preparing a revised forecast.

Question No: 10 (Marks: 1) - Please choose one

Which one of the following forecasting technique is based on historical data?

- ▶ **Time series**
- ▶ Qualitative
- ▶ Judgmental
- ▶ Associative

Ref: Time series - uses historical data assuming the future will be like the past and depend on developing relationships between variables that can be expressed to predict future values. (Handouts page no. 35)

Question No: 11 (Marks: 1) - Please choose one

Which one of the following forecasting techniques use subjective inputs su from consumer surveys, sales staff, managers and experts?

- ▶ Time series
- ▶ Quantitative
- ▶ **Judgmental**
- ▶ Associative

Ref: Judgmental - uses subjective inputs meaning that a judgmental forecast rely on analysis of subjective inputs obtained from various sources, such as consumer surveys, the sales staff, managers and executives, and panels of experts. These insights are not available publicly. (Handouts Page No. 35)

Question No: 12 (Marks: 1) - Please choose one

Which of the following approaches favors adopting a “go for it” strategy?

- ▶ Maximin
- ▶ **Maximax**
- ▶ Minimax regret

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► Laplace

Ref: Maximax:

- Maximax determines
- the best possible outcome
- Choose the Alternative with the best possible payoff.
- It does not take into account any other alternative then the best payoff.
- An optimistic approach.
- Go for it strategy. (Handouts Page No. 26)

Question No: 13 (Marks: 1) - Please choose one

Given the table:

Alternatives	Possible future demand	
	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000
Large facility	18,000	15,000

Which one of the following is the correct payoff under MAXIMAX approach?

- Rs. 10,000
- Rs. 18,000
- **Rs. 20,000**
- Rs. 32,000

Ref: Choose the Best maximum Value for MAXIMAX approach.

Question No: 14 (Marks: 1) - Please choose one

Which one of the following is NOT a step of decision making process?

- Develop alternatives
- Monitor results
- **Consider risk averseness strategies**
- Specify criteria for decision

Ref: Normally the decision making process involves the following six important steps

1. Specify Objectives and the Criteria for decision making
2. Develop Alternatives
3. Analyze and compare alternatives.
4. Select the best alternative.
5. Implement the chosen Alternative
6. Monitor the results to ensure the desired results are achieved.

(Handouts Page No. 24)

Question No: 15 (Marks: 1) - Please choose one

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Which one of the following stages of product life cycle relates to more predictable behavior in terms of capacity requirements?

- ▶ Introduction
- ▶ Growth
- ▶ **Maturity**
- ▶ Decline

Ref: Maturity Stage. As the products of firms move into the maturity stage, attracting highly skilled individuals is no longer as high a priority. Firms in the mature stage have an extensive internal labour market and extensive training and development programs. Firms in this stage may pay high wages to retain skilled talent. Economic downturns are handled by employee layoffs. Conflict resolutions and due process under collective bargaining are the grievance procedures with third party arbitration (Kochan & Chalykoff, 1985). **The environment (customer demand and competitors) becomes more stable and predictable (but as competitive) in comparison with the growth stage.**

<http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sjacksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=en&gl=pk&pid=bl&srcid=ADGEESigJYxwqHconGqfCMjw0LjJ83rXBJuDpDj9ii07-2VUwmVTBF6K-Xm7xu1THfTijPxrbsqKJD0KKZziOIaotlvC4pPqcxwZ2J3KdX3QIQo8iw3VCTRAsXg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMIRvbg>

Question No: 16 (Marks: 1) - Please choose one

Which one of the following statement is TRUE about cost-volume relationship?

- ▶ **It represents the relationship between cost, revenue and volume of output.**
- ▶ It represents the relationship between cost and volume of output.
- ▶ It represents the relationship between cost and revenue.
- ▶ It represents the relationship between inputs, cost and volume of output.

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. (Handouts Page No. 73)

Question No: 17 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute break even point?

- ▶ $Q = VC / (R - VC)$
- ▶ **$Q = FC / (R - VC)$**
- ▶ $Q = VC / (R + FC)$
- ▶ $Q = FC / (R + VC)$

Ref: $QBEP = FC / (R - VC)$ (Handouts Page No. 76)

Question No: 18 (Marks: 1) - Please choose one

ABC Corporation has planned to purchase a new machine. Total annual fixed cost is Rs. 10,000, variable cost is Rs. 5 per unit and revenue is Rs. 7 per unit. What would be

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the break even point?

- ▶ 833 units
- ▶ 2000 units
- ▶ **5000 units**
- ▶ 1012 units

Ref: $QBEP = FC / (R - VC)$

$$QBEP = 10000 / (7-5)$$

$$QBEP = 10000/2$$

$$QBEP = 5000 \text{ Units}$$

Question No: 19 (Marks: 1) - Please choose one

Which of the following terms of financial analysis are important for the organization to proceed with a capacity alternative decision?

- ▶ Cash flow and fixed cost
- ▶ Present value and fixed cost
- ▶ **Cash flow and present value**
- ▶ Cash flow and profit

Ref: Operations manager along with managerial accountant often work to calculate what cash flow or present value in terms of rupees is available for the organization to proceed with a capacity alternative decision. (Handouts Page No. 76)

Question No: 20 (Marks: 1) - Please choose one

Which of the following is a system designed to coordinate all activities and information needed to complete business processes?

- ▶ **Enterprise resource planning**
- ▶ Supply chain management
- ▶ New product development
- ▶ Customer relationship management

Ref: Enterprise resource planning (ERP) is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes such as order fulfillment or billing.

<http://www.zbeanstech.com/open-source-erp>

Question No: 21 (Marks: 1) - Please choose one

Which of the following is NOT a characteristic of product layouts?

- ▶ **High material handling costs**
- ▶ Sequential arrangement of machines
- ▶ Standardized output
- ▶ Continuous production system

Ref: <http://www.authorstream.com/Presentation/partha.chatterjee004-831897-plant-layout/> (See the Slide No. 5 and 6)

Question No: 22 (Marks: 1) - Please choose one

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Which one of the following layout types is associated with car assembly?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ **Product layout**
- ▶ Hybrid layout

Ref: Product – Layout should suit to the nature of product and its method of production. I.e. aircraft manufacturing and car manufacturing layouts will be different. Sales also affect the layout. <http://www.scribd.com/doc/7369836/Facility-Layout>

Question No: 23 (Marks: 1) - Please choose one

In exponential smoothing model, α denotes:

- ▶ **Smoothing constant**
- ▶ Actual forecast
- ▶ Forecast error
- ▶ Previous forecast

Ref: α = Alpha smoothing constant (Handouts page No. 40)

Question No: 24 (Marks: 1) - Please choose one

Which one of the following designs resists modifications?

- ▶ **Frozen design**
- ▶ Product design
- ▶ Service design
- ▶ Robust design

Ref: Another disadvantage is that a manufacturer may freeze (standardize) a **design** prematurely and, once the **design** is **frozen**, it may find compelling reasons to resist modification.

http://webcache.googleusercontent.com/search?q=cache:ASewL4qNRRkJ:highered.mcgraw-hill.com/sites/dl/free/0073041912/354902/ste41912_ch04.pdf+Frozen+design+%E2%96%BA+Product+design+%E2%96%BA+Service+design+%E2%96%BA+Robust+design+resists+modifications&cd=3&hl=en&ct=clnk&gl=pk&source=www.google.com.pk

Question No: 25 (Marks: 1) - Please choose one

Which one of the following is TRUE about Taguchi Approach?

- ▶ **To test the robustness of a design**
- ▶ To articulate the “voice of the customer”
- ▶ To reduce the degree of automation
- ▶ To create a concurrent design

Ref: The defining characteristics for the Taguchi approach include:

- Design a robust product
- Insensitive to environmental factors either in manufacturing or in use.
- Central feature is Parameter Design. (Handouts Page No. 52)

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Question No: 26 (Marks: 1) - Please choose one

Which one of the following refers to using some of the components of old products in the manufacturing of new products?

- ▶ Manufacturability
- ▶ **Remanufacturing**
- ▶ Robust design
- ▶ Automation

Ref: Design for Remanufacturing: Using some of the components of the old products in the manufacture of new products. **(Handouts Page No. 51)**

Question No: 27 (Marks: 1) - Please choose one

Which one of the following is a curve showing failure rate over time?

- ▶ Cost curve
- ▶ **Bath tub curve**
- ▶ Fish bone diagram
- ▶ Reliability curve

Ref: The figure above shows a bathtub shape and thus rightly is referred to as the Bathtub curve. On the Y axis we represent the Failure rate and on the X axis we represent the Time. **(Handouts Page No. 60)**

Question No: 28 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 250 hours between repairs, and the mean repair time is expected to be 3 hours?

- ▶ 1.01
- ▶ 5.03
- ▶ 3.0
- ▶ **0.98**

Ref: $\text{Availability} = (\text{MTBF}) / (\text{MTBF} + \text{MTR})$
 $\text{Availability} = 250 / (250 + 3)$
 $\text{Availability} = 250 / 253 = \mathbf{0.98}$

Question No: 29 (Marks: 1) - Please choose one

Which one of the following is the goal of method analysis?

- ▶ **Dividing and analyzing a job**
- ▶ Check individual human motions used to perform an operation
- ▶ Determining the length of time it will take to undertake a particular task
- ▶ Determining the amount of time a worker spends on various activities

Ref: Design of Work Systems is used to describe the two basic approaches to job design. **(Handouts Page No. 87)**

Question No: 30 (Marks: 1) - Please choose one

Which one of the following is an example of regional factors that affect location decisions?

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- ▶ Transportation
- ▶ Quality of life
- ▶ Development support
- ▶ **Location of new markets**

Ref: Regional Factors

1. Location of raw materials
2. Location of markets
3. Labor factors
4. Climate and taxes (Handouts Page No. 96)

Question No: 31 (Marks: 1) - Please choose one

Which one of the following is an example of site related factors that affect location decision?

- ▶ **Transportation**
- ▶ Quality of life
- ▶ Location of new markets
- ▶ Location of raw materials

Ref: Site Related Factors

- Land
- Transportation
- Environmental
- Legal (Handouts Page No. 96)

Question No: 32 (Marks: 1) - Please choose one

Which one of the following statements is **true** about Occupational Safety Hygiene Administration (OSHA)?

- ▶ **To safeguard against potential hazards**
- ▶ To develop cost effective processes
- ▶ To implement legal standards
- ▶ To carry out implication of manufacturability and fitness

Ref: Under the OSH Act, OSHA develops and sets mandatory occupational safety and health requirements applicable to the more than 6 million workplaces in the U.S. OSHA relies on, among many others, industrial hygienists to evaluate jobs for potential health hazards.

<http://www.laborcommission.utah.gov/UOSH/Outreach/ConstructionCD/www.osha.gov/SLTC/smallbusiness/sec5.html>

Question No: 33 (Marks: 1) - Please choose one

Which one of the following is used to produce gasoline and petroleum products?

- ▶ Job shop
- ▶ Batch processing
- ▶ Assembly line
- ▶ **Continuous processing**

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Ref: http://highered.mcgraw-hill.com/sites/0073403296/student_view0/chapter7/multiple_choice_quiz.html (See the Question No. 02)

Question No: 34 (Marks: 1) - Please choose one

The type of processing structure that is used for producing discrete products at higher volume is:

- ▶ Continuous Flow
- ▶ **Assembly Line**
- ▶ Batch
- ▶ Job shop

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html (See the Question No. 3)

Question No: 35 (Marks: 1) - Please choose one

An example of a business/industry that uses batch flow process structure is:

- ▶ Commercial printer
- ▶ **Heavy equipment**
- ▶ Automobile assembly
- ▶ Sugar refinery

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html (See the Question No. 04)

Question No: 36 (Marks: 1) - Please choose one

Services differ from manufacturing in all the following ways EXCEPT:

- ▶ Customers typically interact directly with the service delivery process.
- ▶ Consumption and production take place simultaneously.
- ▶ Services are intangible.
- ▶ **Services can be stored**

Ref: service operations are different from manufacturing operations in terms of

- Tangible and intangible output
- customer consumption
- use of labor and equipment
- customer contact
- customer participation in conversion process
- measuring activities and resources

http://wiki.answers.com/Q/How_do_service_operations_differ_from_manufacturing_operations

Question No: 37 (Marks: 1) - Please choose one

Quality, costs, lead times, operating resources are all related to which one of the

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following strategies.

- ▶ Organizational strategy
- ▶ Financial strategy
- ▶ **Operational strategy**
- ▶ Tactical strategy

Ref: OPERATIONS STRATEGY: (Deals with the operations aspect of an organization). OS is related to products, processes, methods, operating resources, quality, costs, lead times, and scheduling.

http://docs.google.com/viewer?a=v&q=cache:Z8OTKodTI24J:bulatov.org.ua/teaching_courses/nam_operations/L2%2520PRODUCTIVITY,%2520COMPETITIVENESS,%2520STRATEGY.doc+Quality,+costs,+lead+times,+operating+resources+are+all+related+to+Operational+strategy&hl=en&pid=bl&srcid=ADGEESjFppdZdPqJCYGeE5eZ0lbXSbBIaQuAZHRq8WGSAb060LQFyePsZ7uLK3tBxikelBwidDvqI2uehI7dlnTODYpZMU2xVYk6oWk7IHplh4hW3Brot6pOUAe-f0XbM42tJV6kLRzg&sig=AHIEtbTIW5C5SYPMTZqjIHd9wX_vuoJE6g

Question No: 38 (Marks: 1) - Please choose one

All of the following are examples of the transformation process EXCEPT:

- ▶ Cutting
- ▶ Packing
- ▶ **Facilitating**
- ▶ Labeling

Ref: Examples of Transforming process and input in Food Processor:

Inputs

Raw vegetables
Metal sheets
Water
Energy
Labor
Building
Equipment

Process

cleaning
Making cans
Making cans
Cutting
Cooking
Packing
Labeling

http://docs.google.com/viewer?a=v&q=cache:27Zjwa-o6_kJ:highered.mcgraw-hill.com/sites/dl/free/0070951675/436573/samplech01.pdf+examples+of+the+transformation+process+are+Cutting+%E2%96%BA+Packing+%E2%96%BA+Facilitating+%E2%96%BA+Labeling&hl=en&pid=bl&srcid=ADGEESi98aGPPXv5w0w-VBGRprednU-ENzzYtfDBdUfcf5sT5vBu0th2m1I74tG1Qt4oZOb-Fa69OEDb-QWocDFhQvspN6W9p8LqyxNvDaLoKOWUVy-rmCYeoSCBOUclepGwcQPLn7s&sig=AHIEtbQ8kba9NbTRC4loArQHIWN-H50AoQ

Question No: 39 (Marks: 1) - Please choose one

_____ purpose is to coordinate and control all the required sources so that productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control

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► **Demand management**

- Forecasting
- Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvgP9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=true

Question No: 40 (Marks: 1) - Please choose one

Which of the following is a characteristic of linear regression?

- It is superior to a moving average
- **It is a causal forecasting model**
- It compensates for both trend and seasonal variations in demand
- It is superior to an exponential smoothing

Ref: Linear regression is used both for time series forecasting and for casual relationship forecasting. When the dependent variable (usually the vertical axis on the graph) changes as a result of time (plotted on the horizontal axis), it is time series analysis. When the dependent variable changes because of the change in another variable, this is a casual relationship (such as the demand of cold drinks increasing with the temperature).

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+linear+regression+compensates+for+both+trend+and+seasonal+variations+in+demand&hl=en&pid=bl&srcid=ADGEESg3c6cLEJGxFaeYDJmynagPFzwnMllzbF5wpI0nxIgJ8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEtbQweGQ9quetmEqfenwFdiUUE2eZeg

Paper No. 10

MIDTERM EXAMINATION

Spring 2010

MGT613- Production / Operations Management (Session - 5)

Solved By Honey G <abdulhaiee2004@gmail.com>

Time: 60 min

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Question No: 1 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per shift?

- ▶ Capital
- ▶ Energy
- ▶ **Labor**
- ▶ Machine

Ref: Labor Productivity:

- Units of output per labor hour
- Units of output per shift
- Value-added per labor hour (Handouts Page No. 19)

Question No: 2 (Marks: 1) - Please choose one

Operations manager is responsible for all of the following EXCEPT:

- ▶ Forecasting
- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Distributing organizations' goods**

Ref: Operations Managers job responsibility includes but is not limited to:

- Forecasting
- Capacity planning
- Scheduling
- Inventory Management
- Quality Assurance and Control
- Motivating employees
- Deciding where to locate facilities (Handouts Page No. 03)

Question No: 3 (Marks: 1) - Please choose one

Which of the following is **NOT** a decision to be made by operations managers?

- ▶ How much capacity is required to balance demand?
- ▶ What should be the location and layout of a facility?
- ▶ How to improve operational efficiency?
- ▶ **Which market areas to manufacture the products for?**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4471/1144826.cw/index.htm
(See the Question No. 08)

Question No: 4 (Marks: 1) - Please choose one

All of the following are the decision areas of an operations manager EXCEPT:

- ▶ **Financial reporting**
- ▶ Inventory management
- ▶ Scheduling tasks
- ▶ Supply chain management

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Ref: Major operations decisions areas include inventory, capacity, quality, scheduling, process type, technology, location, layout, and supply chain management.
<http://en.allexperts.com/q/Management-Consulting-2802/2011/2/Production-Operations-Management-1.htm>

Question No: 5 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute value?

- ▶ (Quality + Speed – Flexibility) / Cost
- ▶ **(Quality + Speed+ Flexibility) / Cost**
- ▶ (Quality + Speed - Cost) / Flexibility
- ▶ (Quality + Speed+ Cost) / Flexibility

Ref: Value= Performance/Cost= (Quality +Speed+ Flexibility)/Cost
(Handouts page No. 10)

Question No: 6 (Marks: 1) - Please choose one

Which one of the following forecasting techniques uses explanatory variables to predict future demand?

- ▶ **Quantitative forecast**
- ▶ Time series forecast
- ▶ Consumer survey
- ▶ Executive opinion

Ref: Associative model is the type of quantitative forecasting.

Associative Models: forecasting technique that uses explanatory variables to predict future demand. <http://cramberry.net/sets/26728-operational-management-3>

Question No: 7 (Marks: 1) - Please choose one

Which one of the following involves completing a series of questionnaires each developed from the previous one, to achieve a consensus forecast?

- ▶ Consumer surveys
- ▶ Executive opinion
- ▶ Time series forecast
- ▶ **Delphi method**

Ref: Delphi method: Managers and staff complete a series of questionnaires, each developed from the previous one, to achieve a consensus forecast. (Handouts Page No35)

Question No: 8 (Marks: 1) - Please choose one

In which one of the following situations, the use of a decision tree is required instead of a payoff table?

- ▶ When there are more than three states of nature
- ▶ When there are more than three decision payoffs
- ▶ When the decision situation encompasses an extended time period

Note: Solve these papers by yourself

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► **When a series of decisions is required**

Ref: However, a payoff table is usually limited to a single decision situation, as in our real estate investment example. If a decision situation requires a series of decisions, then a payoff table cannot be created, and a decision tree becomes the best method for decision analysis. <http://flylib.com/books/en/3.287.1.160/1/>

Question No: 9 (Marks: 1) - Please choose one

Which one of the following is an implication of Laplace approach of decision making?

- The best of the worst possible payoff
- The best possible payoff
- **The best average payoff**
- The least of the worst regrets

Ref: Laplace, the best payoff of the average for each alternative. (Handouts Page No. 27)

Question No: 10 (Marks: 1) - Please choose one

Which one of the following is a limitation of a moving average having a trend?

- **The forecast lags behind the actual**
- The forecast represents demand more accurately
- The forecast will not be accurate
- The forecast will not be reliable

Ref: If, over several periods, a time series shows a change in the average value which corresponds to the trend model, the forecast values always lag behind the actual values by one or several periods in the first-order exponential smoothing procedure. http://help.sap.com/saphelp_45b/helpdata/en/a5/6320e843a211d189410000e829fbbd/content.htm

Question No: 11 (Marks: 1) - Please choose one

Which of the following is a system designed to coordinate all activities and information needed to complete business processes?

- **Enterprise resource planning**
- Supply chain management
- New product development
- Customer relationship management

Ref: Enterprise resource planning (ERP) is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes such as order fulfillment or billing. <http://www.zbeanztech.com/open-source-erp>

Question No: 12 (Marks: 1) - Please choose one

Which of the following is NOT a characteristic of product layouts?

- **High material handling costs**
- Sequential arrangement of machines

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- ▶ Standardized output
- ▶ Continuous production system

Ref: <http://www.authorstream.com/Presentation/partha.chatterjee004-831897-plant-layout/>
(See the Slide No. 5 and 6)

Question No: 13 (Marks: 1) - Please choose one

What would be the required cycle time for a process that operates 9 hours daily with a desired output of 300 units per day?

- ▶ 0.03 minutes
- ▶ **1.8 minutes**
- ▶ 2700 minutes
- ▶ 291 minutes

Ref: $CT = \text{Time Cycle} = \text{Operating Time} / \text{Desire Output}$
 $CT = \text{Time Cycle} = 9 * 60 / 300 = \mathbf{1.8 \text{ minutes}}$

Question No: 14 (Marks: 1) - Please choose one

Which of the following factors are considered in product and service design?

- ▶ Customer satisfaction, quality, and improvement costs
- ▶ Employee motivation, quality, and production costs
- ▶ Customer satisfaction, flexibility, and production costs
- ▶ **Customer satisfaction, quality, and production costs**

Ref: A good product/service design can ensure customer satisfaction, quality and production costs. (Handouts Page No. 44)

Question No: 15 (Marks: 1) - Please choose one

In order to comply with the environmental standards, an organization ABC has to implement Occupational Safety Hygiene Administration (OSHA). Which one of the following is a way to accomplish this task?

- ▶ Promoting friendly relations among employees
- ▶ **Installing safety guards and devices to reduce the risk of potential accidents**
- ▶ Installing machinery to make the process speedy
- ▶ Installing machinery that provides cost effective output

Ref: The main objective of this work was to analyze the occupational health and safety issues in the steel/iron re-rolling mills. The objectives are to identify the workplace accident risks and to certain the recommendations to evade these risks.

<http://docs.google.com/viewer?a=v&q=cache:5vmpOun33BQJ:www.iepkc.org/7nsos/papers/A%2520Case%2520Study%2520OHS%2520---%2520Islamabad%2520-%2520Hira%2520amjad.pdf+Occupational+Safety+Hygiene+Administration+implement+Installing+safety+guards+and+devices+to+reduce+the+risk+of+potential+accidents&hl=en&gl=pk&pid=bl&srcid=ADGEESjVCZsxhbtlk27ez2kiT48yWHNjBP4Bp7xDrAzKH2OQcL-xkgZ12tEUONHstpxC9sZtu0YVJRdkLbZmU8OnSgFUMFeuyZG1K-PSYHgkMWGC92SFqlfcxwSZtaGplwWzA4lTVu->

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m&sig=AHIEtbQWvnlCJkI11nBMwos8uPmV4XYeRg

Question No: 16 (Marks: 1) - Please choose one

Which one of the following is TRUE about Taguchi Approach?

▶ **To test the robustness of a design**

- ▶ To articulate the “voice of the customer”
- ▶ To reduce the degree of automation
- ▶ To create a concurrent design

Ref: The defining characteristics for the Taguchi approach include:

- Design a robust product
- Insensitive to environmental factors either in manufacturing or in use.
- Central feature is Parameter Design. **(Handouts Page No. 52)**

Question No: 17 (Marks: 1) - Please choose one

Which one of the following refers to a design that takes into account organization's operational capabilities, when designing a product?

- ▶ Design for assembly
- ▶ **Design for manufacturing**
- ▶ Design for recycling
- ▶ Design for disassembly

Ref: Design for Manufacturing (DFM): The designers' consideration of the organization's manufacturing capabilities when designing a product. **(Handouts Page No. 51)**

Question No: 18 (Marks: 1) - Please choose one

Which one of the following mathematical expressions can be used to compute availability?

- ▶ **$(MTBF) / (MTBF + MTR)$**
- ▶ $(MTBF) / (MTBF - MTR)$
- ▶ $(MTR) / (MTBF + MTR)$
- ▶ $(MTR) \times (MTBF - MTR)$

Ref: Availability = $(MTBF) / (MTBF + MTR)$ **(Handouts Page No. 63)**

Question No: 19 (Marks: 1) - Please choose one

Forecasting accuracy has _____ relation with time horizon.

- ▶ **Inverse**
- ▶ Linear
- ▶ Direct
- ▶ Parallel

Ref: Forecast accuracy decreases as time horizon increases indicating it is safe to make short range forecasts instead of long term forecasts. **(Handouts Page No. 33)**

Question No: 20 (Marks: 1) - Please choose one

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Which one of the following factors makes a forecast LESS perfect?

► **Randomness**

- Non serious attitude
- Non availability of data
- Un qualified personnel

Ref: Forecasts rarely perfect because of RANDOMNESS (having no specific pattern). Allowances should be made for inaccuracies. **(Handouts Page No. 33)**

Question No: 21 (Marks: 1) - Please choose one

Which one of the following is a key benefit of process plant strategy?

► **Economies of scale**

- Diseconomies of scale
- Product variety
- Task specialization

Ref:

http://books.google.com/books?id=tqVIT0xE4NAC&pg=PA369&dq=key+benefit+of+process+plant+strategy&hl=en&ei=cjd1TaX5LIfrQeo39DRCg&sa=X&oi=book_result&ct=result&resnum=2&ved=0CDIQ6AEwAQ#v=onepage&q=key%20benefit%20of%20process%20plant%20strategy&f=false **(READ THE SECOND PARAGRAPH)**

Question No: 22 (Marks: 1) - Please choose one

Which one of the following is used to produce gasoline and petroleum products?

- Job shop
- Batch processing
- Assembly line

► **Continuous processing**

Ref: http://highered.mcgraw-hill.com/sites/0073403296/student_view0/chapter7/multiple_choice_quiz.html **(See the Question No. 02)**

Question No: 23 (Marks: 1) - Please choose one

Which of the following is NOT mark of a good layout in manufacturing?

► **Bottleneck operations**

- Straight line flow pattern (or adaption)
- Work stations close together
- Open plant floors (high visibility)

Ref: http://forecast.umkc.edu/ftppub/ba547/chapter_10.htm **(SEE THE QUESTION NO. 01)**

Question No: 24 (Marks: 1) - Please choose one

Services differ from manufacturing in all the following ways EXCEPT:

- Customers typically interact directly with the service delivery process.
- Consumption and production take place simultaneously.

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► Services are intangible.

► **Services can be stored**

Ref: service operations are different from manufacturing operations in terms of

- Tangible and intangible output
- customer consumption
- use of labor and equipment
- customer contact
- customer participation in conversion process
- measuring activities and resources

http://wiki.answers.com/Q/How_do_service_operations_differ_from_manufacturing_operations

Question No: 25 (Marks: 1) - Please choose one

All of the following are examples of time based strategies **EXCEPT:**

► Products /service design time

► Processing time

► Response time for complaints

► **Response time for innovation**

Ref: There are 6 time based strategies namely:-

1. **Planning Time:** The time required to react to a competitive threat, or to adopt new technologies, or to approve changes to an existing facility
 2. **Products/Service Design Time:** The time needed to develop or market new or redesigned products or services
 3. **Processing Time:** The time required to produce goods or services, includes repairing equipment, quality training, inventory etc
 4. **Changeover Time:** is the time needed to change from producing one type of product or service to another. New model, new insurance /health service.
 5. **Delivery Time:** is the time needed to fill orders.
 6. **Response Time for complaints:** is the required to improve the model or service features according to customer inputs and improving employee working conditions.
- (HANDOUTS PAGE NO. 18)

Question No: 26 (Marks: 1) - Please choose one

Which one of the following statements relates to the final stage of product life cycle?

► Improve reliability, and reduce production costs

► **Improve packaging and reliability**

► Improve reliability, and reduce quality

► Improve reliability, and reduce promotion costs

Ref: DECLINE: In this phase, most of the organizations adopt a defensive design R&D Strategy in an attempt to prolong the life of the product by employing new packaging, redesigning it, improving its reliability.

<http://www.websukat.com/TQM-product-life-cycle.htm>

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Question No: 27 (Marks: 1) - Please choose one

Which one of the following is responsible for administering environmental issues about product and service design?

- ▶ Central Board of Revenue
- ▶ **Environmental Protection Agency**
- ▶ Federal Drug Agency
- ▶ Occupational Safety Hygiene Administration

Ref: Environmental. Operations Manager should also work with in the same Environmental laws as his organization. EPA is active in all countries including Pakistan and even a CEO can be jailed if there is a failure to comply with the Environment laws.

(HANDOUTS PAGE NO. 47)

Question No: 28 (Marks: 1) - Please choose one

Which of the following layouts facilitates the handling of varied processing requirements?

- ▶ Product layout
- ▶ **Process layout**
- ▶ Fixed-position layout
- ▶ Hybrid/Combination layout

Ref: Process layout. A Layout that can handle varied processing requirements.

(Handouts Page No. 80)

Question No: 29 (Marks: 3)

How many multiple plant strategies are used in a company having multiple manufacturing facilities?

Mostly following are the below given multiple manufacturing facilities are used

With combination in plant strategies;

- Product plant strategy
- Market area plant strategy
- Process plant strategy

Question No: 30 (Marks: 3)

What are the key steps involved in formulating a capacity planning strategy?

Following are the key steps involved in formulating a capacity planning strategy;

Steps for formulating a Capacity Planning Strategy

1. Estimate future capacity requirements
2. Evaluate existing capacity
3. Identify alternatives
4. Conduct financial analysis
5. Assess key qualitative issues
6. Select one alternative
7. Implement alternative chosen
8. Monitor results

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Question No: 31 (Marks: 5)

Suppose you are the operations manager of ABC Corporation. To develop competence in business operations, you have to decide either to rely on the facilities available in-house or outsource. What are some of the factors you would base the decision on?

Following are the factors which are available to us in order to decide whether to develop a competence in house or outsource competent organization to supply that product, service or particular expertise.

1. **Available capacity** if an organization has the equipment, necessary skills and time, it often makes sense to produce an item or perform a service in house. The additional costs would be relatively small compared with those required to buy items or subcontract them.
2. **Expertise.** If a firm lacks the expertise to do a job satisfactorily, buying might be a reasonable alternative.
3. **Quality considerations.** Firms that specialize can usually offer higher quality than an organization can attain itself. Conversely, special quality requirements or the ability to closely monitor quality may cause an organization to perform a job itself.
4. **Nature of demand.** When demand for an item is high and steady, the organization is often better off doing the work itself. However, wide fluctuations in demand or small orders are usually better handled by specialists, who are able to combine orders from multiple sources, which results in higher volume and tend to offset individual buyer fluctuation.
5. **Cost.** Any cost savings achieved from buying or making must be weighed against the preceding factors. Cost savings might come from the item itself or from transportation cost savings.
6. **Risk.** Outsourcing or buying the services carries risk; often companies retain flexibility by carrying out certain critical activities in house and repetitive menial activities through outsourcing.

Question No: 32 (Marks: 5)

“Standardization plays an important role in product design”. How will you describe this role?

Standardization plays an important role in product design, because Standardization is the extent to which there is an absence of variety in a product, service or process.

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- Opportunities for long production runs and automation .Uninterrupted stock of components available, so production can be controlled and if possible a demand forecast may be used.
- Need for fewer parts justify increased expenditures on perfecting designs and improving quality control procedures. The company can free up its inventory carrying costs and use it on increasing its long term tangible and intangible quality standards
- Reduced training costs and time. An important advantage and can improve productivity.

Paper No. 11

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 2)

Solved By Honey G <abdulhaice2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Who developed the use of standardization in large-scale mass production using a moving assembly line?

- ▶ Frederick Winslow Taylor
- ▶ Frank Gilbreth
- ▶ Adam Smith
- ▶ **Henry Ford**

Ref: Mass production (also called **flow production**, **repetitive flow production**, **series production**, or **serial production**) is the production of large amounts of standardized products, including and especially on assembly lines. Mass production was popularized in the 1910s and 1920s by Henry Ford's Ford Motor Company, which introduced electric motors to the then-well-known technique of chain or sequential production.

http://en.wikipedia.org/wiki/Mass_production

OR

[http://highered.mcgraw-](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html)

[hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html](http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html) (See the **Question No. 05**)

Question No: 2 (Marks: 1) - Please choose one

Within the operations function, which one of the following is a long-term management decision?

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- ▶ Control decision
- ▶ Non-operational decision
- ▶ **Strategic decision**
- ▶ Tactical decision

Ref: Strategic Importance

1. Long term commitment/costs
2. Impact on investments, revenues, and operations
3. Supply chains (Handouts Page No. 95)

Question No: 3 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per shift?

- ▶ Capital
- ▶ Energy
- ▶ **Labor**
- ▶ Machine

Ref: Labor Productivity:

- Units of output per labor hour
- Units of output per shift
- Value-added per labor hour (Handouts Page No. 19)

Question No: 4 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per dollar input?

- ▶ **Capital**
- ▶ Energy
- ▶ Labor
- ▶ Machine

Ref: Capital Productivity

Units of output per Rs. input

Dollar value of output per Rs. Input (Handouts Page No. 19)

Question No: 5 (Marks: 1) - Please choose one

Operations manager is responsible for all of the following EXCEPT:

- ▶ Forecasting
- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Distributing organizations' goods**

Ref: Operations Managers job responsibility includes but is not limited to:

- Forecasting
- Capacity planning
- Scheduling
- Inventory Management
- Quality Assurance and Control

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- Motivating employees
 - Deciding where to locate facilities
- (Handouts Page No. 03)

Question No: 6 (Marks: 1) - Please choose one

Which of the following is NOT usually considered a general characteristic of a service?

- ▶ Production and sales cannot easily be separated functionally
- ▶ Many services involve both tangible and intangible outputs
- ▶ **Production and consumption can always be separated**
- ▶ Degree of customer contact is high

Ref.: Since services are intangible, they cannot be stored. The production and consumption of a service usually occur at the same time.

http://docs.google.com/viewer?a=v&q=cache:L4jyS-JP7UsJ:highered.mcgraw-hill.com/sites/dl/free/0073403318/823112/Sample_Chap_01.pdf+Which+of+the+following+is+NOT+usually+considered+a+general+characteristic+of+a+service%3F+%E2%96%BA+Production+and+sales+cannot+easily+be+separated+functionally+%E2%96%BA+Many+services+involve+both+tangible+and+intangible+outputs+%E2%96%BA+Production+and+consumption+can+always+be+separated+%E2%96%BA+Degree+of+customer+contact+is+high&hl=en&gl=pk&pid=bl&srcid=ADGEEShuWM-Q96C6O4K2DaS9KmGK-rPQprFwAtcLde-7pLcrju7ARaKaP-W0cfES19wotDRnGLRXY2mt2-ESMdhRisXsgqIHrkAVBjXKgzKtFi9C8cxTZbCpNt1A4s-LEGwm619tSfgJ&sig=AHIEtbSbq2OWcRtK1dw4gNnlnLQJb-T-Kw

Question No: 7 (Marks: 1) - Please choose one

Which of the following is NOT a decision to be made by operations managers?

- ▶ How much capacity is required to balance demand?
- ▶ What should be the location and layout of a facility?
- ▶ How to improve operational efficiency?
- ▶ **Which market areas to manufacture the products for?**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4471/1144826.cw/index.html
(See the Question No. 08)

Question No: 8 (Marks: 1) - Please choose one

A business process is a logical set of tasks or activities that:

- ▶ Are specific to the operations function
- ▶ Are specific to the marketing function
- ▶ **Are interdependent with other processes**
- ▶ Have exactly the same performance measures for any process

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter5/multiple_choice_quiz.html

(See the Question No. 05)

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Question No: 9 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute value?

- ▶ (Quality + Speed – Flexibility) / Cost
- ▶ **(Quality + Speed+ Flexibility) / Cost**
- ▶ (Quality + Speed - Cost) / Flexibility
- ▶ (Quality + Speed+ Cost) / Flexibility

**Ref: Value= Performance/Cost= (Quality +Speed+ Flexibility)/Cost
(Handouts page No. 10)**

Question No: 10 (Marks: 1) - Please choose one

Which of the following refers to the essential elements of operations strategy?

- ▶ Policies, tactics and objectives
- ▶ Plans, strategies and vision
- ▶ Mission, goals and plans
- ▶ **Mission, policies and distinctive competencies**

Question No: 11 (Marks: 1) - Please choose one

Which one of the following correctly explains the qualitative forecasting technique?

- ▶ It consists mainly of numerical descriptions and defies subjective inputs of managers.
- ▶ It consists mainly of subjective inputs and defies particular numerical descriptions
- ▶ **It consists mainly of subjective inputs and defies human factor, personal opinions.**
- ▶ It consists mainly of analyzing objective and hard data and defies human factor, opinion.

Ref: Qualitative Techniques which use subjective inputs and no numerical data. It relies solely on soft information like human factors, personal opinion, hunches. Thus Qualitative Forecasts are often biased and tilted towards what the management wants to predict. (Handouts Page No. 34)

Question No: 12 (Marks: 1) - Please choose one

Which of the following approaches favors adopting a “go for it” strategy?

- ▶ Maximin
- ▶ **Maximax**
- ▶ Minimax regret
- ▶ Laplace

Ref: Maximax:

- Maximax determines
- the best possible outcome
- Choose the Alternative with the best possible payoff.
- It does not take into account any other alternative then the best payoff.

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- An optimistic approach.
- Go for it strategy.

(Handouts Page No. 26)

Question No: 13 (Marks: 1) - Please choose one

Which one of the following is an outcome of Maximax?

- ▶ The best of the worst possible payoff
- ▶ **The best possible payoff**
- ▶ The best average payoff
- ▶ The least of the worst regrets

Ref: Maximax:

- Maximax determines
- the best possible outcome
- Choose the Alternative with the best possible payoff.
- It does not take into account any other alternative then the best payoff.
- An optimistic approach.
- Go for it strategy.

(Handouts Page No. 26)

Question No: 14 (Marks: 1) - Please choose one

Which one of the following is a limitation of a moving average having a trend?

- ▶ **The forecast lags behind the actual**
- ▶ The forecast represents demand more accurately
- ▶ The forecast will not be accurate
- ▶ The forecast will not be reliable

Ref: If, over several periods, a time series shows a change in the average value which corresponds to the trend model, the forecast values always lag behind the actual values by one or several periods in the first-order exponential smoothing procedure.
http://help.sap.com/saphelp_45b/helpdata/en/a5/6320e843a211d189410000e829fbbd/content.htm

Question No: 15 (Marks: 1) - Please choose one

Which of the following is a technique that averages a number of recent actual values that are updated as new values become available?

- ▶ **Simple moving average**
- ▶ Delphi method
- ▶ Trend adjusted forecast
- ▶ Naïve forecast

Ref: Moving average – A technique that averages a number of recent actual values, updated as new values become available. (Handouts Page No. 37)

Question No: 16 (Marks: 1) - Please choose one

A workers strike represents which of the following behaviors of a time series?

- ▶ Cycle

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▶ Trend

▶ Seasonality

▶ **Irregular variations**

Ref: Irregular variations - caused by unusual circumstances such as severe weathers, earthquakes, worker strikes, or major change in product or service. **(Handouts Page No. 37)**

Question No: 17 (Marks: 1) - Please choose one

Which one of the following is called as the difference between designed and utilized capacity?

- ▶ Design capacity
- ▶ Effective capacity
- ▶ **Buffer capacity**
- ▶ Utilization rate

Ref: Capacity cushion or buffer is the difference between designed and utilized capacity. <http://www.docstoc.com/docs/54960443/Lecture-16ppt> **(See the Slide No. 05)**

Question No: 18 (Marks: 1) - Please choose one

Which one of the following is an index used to measure actual output relative to design capacity?

- ▶ Efficiency
- ▶ Effective capacity
- ▶ Effectiveness
- ▶ **Utilization**

Ref: It can be expressed as a ratio, where utilization = actual output divided by design capacity. This measure is used in both capacity planning and capacity requirements planning processes. <http://www.bnet.com/topics/capacity+utilization>

Question No: 19 (Marks: 1) - Please choose one

The formula for determining the required cycle time is operation time per day divided by:

- ▶ Sum of task times
- ▶ Actual output per day (in units)
- ▶ Number of workstations
- ▶ **Desired output (in units)**

Ref: Cycle time is the maximum time allowed at each workstation to complete its set of tasks on a unit. If CT represents cycle time and D represents the desired output then we can calculate cycle time as **(Handouts Page No. 85)**

Question No: 20 (Marks: 1) - Please choose one

Which one of the following layout type is associated with a restaurant?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ Product layout

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► **Hybrid layout**

Ref: http://books.google.com.pk/books?id=sWtlOeC-3pEC&pg=PA111&lpg=PA111&dq=Hybrid+layout++is+associated+with+a+restaurant&source=bl&ots=sL8qmiQ-be&sig=nzSNWZT-NbCFBtjrW0k73nnMMGc&hl=en&ei=UHe4Tdu5GoLJhAenzpGXDw&sa=X&oi=book_result&ct=result&resnum=4&ved=0CCkQ6AEwAw#v=onepage&q&f=false

Question No: 21 (Marks: 1) - Please choose one

Which one of the following mathematical expressions can be used to compute output capacity?

- **OT/CT**
- CT/OT
- CT+OT
- CT-OT

Ref: $OC = \text{Output Capacity} = OT/CT$ (HANDOUTS PAGE NO. 85)

Question No: 22 (Marks: 1) - Please choose one

What would be the output capacity if an assembly line operates for 7 hours per day with a cycle time of 2.0 minutes?

- 210 units per day
- **3.5 units per day**
- 0.004 units per day
- 14 units per day

Ref: $\text{Output Capacity} = \text{Operating Time} / \text{Cycle Time}$
 $\text{Output Capacity} = 7 / 2.0$
Output Capacity = 3.5 Units per day

Question No: 23 (Marks: 1) - Please choose one

Which of the following forecasting technique is based on the assumption that past data is more indicative of the future than the most recent occurrences?

- **Exponential smoothing**
- Linear regression
- Judgmental forecast
- Naive forecast

Ref: In many applications (perhaps in most), the most recent occurrences are more indicative of the future than those in the more distant past. If this premise is valid – “that the importance of data diminishes as the past becomes more distant” - then exponential smoothing may be the most logical and easiest method to use.
http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+Exponential+smoothing+is+based+on+the+assumption+that+past+data+is+more+indicative+of+the+future+than+the+most+recent+occurrences&hl=en&gl=pk&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMllzbF5wpl0nxlgJ8Kn

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R5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-
BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEt
bTwalQd7sTFtecd46RVg72u_ZLEEg

Question No: 24 (Marks: 1) - Please choose one

Which of the following ensures that the design meets the performance characteristics that are specified in the product concept?

▶ **Functional design**

- ▶ Production design
- ▶ Service design
- ▶ Product design

Ref:

http://books.google.com/books?id=7m8VJP0I_ksC&pg=PA47&dq=design+meets+the+performance+characteristics+that+are+specified+in+the+product+concept&hl=en&ei=m8l0TduJJ8fKrAfEwuDSCg&sa=X&oi=book_result&ct=result&resnum=1&ved=0CCcQ6AEwAA#v=onepage&q=design%20meets%20the%20performance%20characteristics%20that%20are%20specified%20in%20the%20product%20concept&f=false

Question No: 25 (Marks: 1) - Please choose one

CBR stands for which one of the following?

- ▶ Commercial board of revenue
- ▶ Central board of recycling
- ▶ Central board of renovation

▶ **Central board of revenue**

Ref: CBR denotes Center Board of Revenue (Handouts Page No. 46)

Question No: 26 (Marks: 1) - Please choose one

In order to comply with the environmental standards, an organization ABC has to implement Occupational Safety Hygiene Administration (OSHA). Which one of the following is a way to accomplish this task?

- ▶ Promoting friendly relations among employees
- ▶ **Installing safety guards and devices to reduce the risk of potential accidents**
- ▶ Installing machinery to make the process speedy
- ▶ Installing machinery that provides cost effective output

Ref: The main objective of this work was to analyze the occupational health and safety issues in the steel/iron re-rolling mills. The objectives are to identify the workplace accident risks and to certain the recommendations to evade these risks.

<http://docs.google.com/viewer?a=v&q=cache:5vmpOun33BQJ:www.iepkc.org/7nsos/papers/A%2520Case%2520Study%2520OHS%2520---%2520Islamabad%2520-%2520Hira%2520amjad.pdf+Occupational+Safety+Hygiene+Administration+implement+Installing+safety+guards+and+devices+to+reduce+the+risk+of+potential+accidents&hl=en&gl=pk&pid=bl&srcid=ADGEESjVCZsxhbtlk27ez2kiT48yWHNjBP4Bp7xDrAzKH>

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PSYHgkMWGC92SFqlfcxwSZtaGplwWzA4ITVu-
m&sig=AHIEtbQWvnlCJkI11nBMwos8uPmV4XYeRg

Question No: 27 (Marks: 1) - Please choose one

Which of the following is an advantage of standardization?

- ▶ Frozen designs
- ▶ Customized parts
- ▶ **Interchangeable parts**
- ▶ Reduced variety

Ref: Advantages of Standardization

- Interchangeable parts
- Orders can be filled from inventory
- Easier repair & replacement
- Lower design costs. http://docs.google.com/viewer?a=v&q=cache:-HcGpKkXXGsJ:mkuyzu.etu.edu.tr/Chp4.pdf+advantage+of+standardization%3F+%E2%96%BA+Frozen+designs+%E2%96%BA+Customized+parts+%E2%96%BA+Interchangeable+parts+%E2%96%BA+Reduced+variety&hl=en&gl=pk&pid=bl&srcid=ADGEEShgD0r40WYN7Ah8bToiQKVOUwMol8VFKVcS2vJeitLzsbJWm6fdzboUL8-C9RzapNADGHnArzelc8KscxcMNZXHbDSWJAFakyrzuLT3Ww2YhDSABe-14JurNU6Ji-LS_qqG5AQ&sig=AHIEtbQ1hSU2is9EsB7nuPrO6QYqRiIzBQ

Question No: 28 (Marks: 1) - Please choose one

Which of the following refers to translate the voice of the customer into technical design requirements?

- ▶ Concurrent design
- ▶ Design for manufacture
- ▶ Robust design
- ▶ **Quality functional deployment**

Ref: A popular managerial view is that the Quality Function should be deployed at the source or at the design stage. We also should know what Quality Function Deployment is. Two common answers being that it is the voice of the customer (which always sets a standard for the service organization to follow) and the second one being that it should be in the form of a house of quality (Handouts Page No. 55)

Question No: 29 (Marks: 1) - Please choose one

A product 'A' is specified to work well up to 30 degree Celsius temperature and 30% humidity. What would these specifications represent?

- ▶ Reliability factor
- ▶ **Standard conditions**
- ▶ Normal operating conditions
- ▶ Standard operating procedure

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Ref: standard condition for temperature and pressure (informally abbreviated as STP) are standard sets of conditions for experimental measurements, to allow comparisons to be made between different sets of data.

http://en.wikipedia.org/wiki/Standard_conditions_for_temperature_and_pressure

Question No: 30 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 350 hours between repairs, and the mean repair time is expected to be 3 hours?

▶ **0.99**

▶ 1.0

▶ 3.0

▶ 7.03

Ref: Availability = (MTBF) / (MTBF + MTR)

Availability = (350) / (350+3)

Availability = 350 / 353

Availability = 0.99

Question No: 31 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 300 hours between repairs, and the mean repair time is expected to be 2 hours?

▶ 6.02

▶ 2.0

▶ **0.99**

▶ 0.006

Ref: Availability = (MTBF) / (MTBF + MTR)

MTBF = Mean time between factor = 300

MTR = Mean repair time = 2 hours

Availability = (300) / (300+2)

Availability = 300 / 302

Availability = 0.99

Question No: 32 (Marks: 1) - Please choose one

Which of the following management level is responsible for long-range capacity planning?

▶ Lower management

▶ Middle management

▶ **Top management**

▶ Non managerial employees

Question No: 33 (Marks: 1) - Please choose one

Capacity planning involves answering all of the following questions EXCEPT:

▶ What kind of capacity is needed?

▶ How much is needed?

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► When is it needed?

► **Who is going to decide?**

Ref: These questions are:

7. What kind of capacity is needed?

8. How much is needed?

9. When is it needed? (Handouts Page No. 64)

Question No: 34 (Marks: 1) - Please choose one

The disadvantages of specialization to management include all of the following EXCEPT:

► More absenteeism

► Minimum responsibility

► More turnover

► **More difficult to teach the job**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the Question No. 06)

Question No: 35 (Marks: 1) - Please choose one

Which of the following can be used to compute standard time?

► Multiplying the elemental average time by the rating factor

► Dividing the average elemental time by the rating factor

► Multiplying the normal cycle time by the rating factor

► **Multiplying the normal cycle time by one plus the allowance factor**

Ref: Standard Time=ST=NT X AF is the normal time plus allowance for delays like (getting a glass of water or going to the washroom human needs) (Handouts Page No. 92)

Question No: 36 (Marks: 1) - Please choose one

Which one of the following is an example of community factors that affect location decisions?

► Transportation

► **Quality of life**

► Location of new markets

► Location of raw materials

Ref: Community Considerations

- Quality of life
- Services
- Attitudes
- Taxes
- Environmental regulations
- Utilities

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- Developer support (Handouts Page No. 96)

Question No: 37 (Marks: 1) - Please choose one

Which one of the following statements is **true** about Occupational Safety Hygiene Administration (OSHA)?

- ▶ **To safeguard against potential hazards**
- ▶ To develop cost effective processes
- ▶ To implement legal standards
- ▶ To carry out implication of manufacturability and fitness

Ref: Under the OSH Act, OSHA develops and sets mandatory occupational safety and health requirements applicable to the more than 6 million workplaces in the U.S. OSHA relies on, among many others, industrial hygienists to evaluate jobs for potential health hazards.

<http://www.laborcommission.utah.gov/UOSH/Outreach/ConstructionCD/www.osha.gov/SLTC/smallbusiness/sec5.html>

Question No: 38 (Marks: 1) - Please choose one

Which of the following is the primary input in capacity planning?

- ▶ Supply chain capabilities
- ▶ Competitors' strengths
- ▶ **Demand forecasts**
- ▶ Overall cost estimates

Ref: Besides service level requirements, the other key input into the capacity planning process is a forecast or plan for the organization's future. Capacity planning is really just a process for determining the optimal way to satisfy business requirements such as forecasted increases in the amount of work to be done, while at the same time meeting service level requirements. <http://www.teamquest.com/pdfs/whitepaper/tqwp23.pdf>

Question No: 39 (Marks: 1) - Please choose one

Services differ from manufacturing in all the following ways EXCEPT:

- ▶ Customers typically interact directly with the service delivery process.
- ▶ Consumption and production take place simultaneously.
- ▶ Services are intangible.
- ▶ **Services can be stored**

Ref: service operations are different from manufacturing operations in terms of

- Tangible and intangible output
- customer consumption
- use of labor and equipment
- customer contact
- customer participation in conversion process
- measuring activities and resources

http://wiki.answers.com/Q/How_do_service_operations_differ_from_manufacturing_operations

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Question No: 40 (Marks: 1) - Please choose one

Forecasting for groups tend to be more accurate than forecasting for individual items because:

- ▶ A group is composed of a number of items
- ▶ A group exhibits a uniform behavior
- ▶ **A group cancels the forecasting errors among items**
- ▶ A group behavior is relatively less uncertain

Ref: Forecasts more accurate for groups vs. individuals naturally because forecasting errors in a group tend to cancel out forecasting errors for individuals. (Handouts page No. 33)

Question No: 41 (Marks: 5)

Given the table:

Alternatives Possible future demand

	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000
Large facility	18,000	15,000

Calculate Maximax, Laplace and Minimax regret?

Maximax:

Choose the Best maximum Value for MAXIMAX approach which is 20,000

Laplace:

Small facility = $10000+8000=18000/2=9000$

Medium facility = $12000+20000=32000/2=16000$

Large facility = $18000+15000=33000/2=16500$

So the Best Possible average is 16500 Laplace.

Minimax:

The minimum Amount is Rs. 8000

Question No: 42 (Marks: 5)

Suppose you are working as an operation manager in an automobile company. Your company wants to move its manufacturing plant from one location to other location. What factors will affect the location decision according to your point of view?

Factors Affecting Location Decisions

The process of determining a geographic site for firms operations takes into account both manufacturing and marketing aspects. We just focus on the manufacturing aspects as it's more closely related to Operations Management

Manufacturing

- Favorable Labor Climate
- Proximity to markets.
- Quality of Life

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- Proximity of Suppliers and Resources.
- Proximity to the Parent Company's facilities.
- Utilities, Taxes and Real estate costs.
- Other factors (expansion, construction costs, and location near the highway or main railways)

Paper No. 12

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 1)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Within the operations function, which one of the following is a long-term management decision?

- ▶ Control decision
- ▶ Non-operational decision
- ▶ **Strategic decision**
- ▶ Tactical decision

Ref: Strategic Importance

1. Long term commitment/costs
2. Impact on investments, revenues, and operations
3. Supply chains **(Handouts Page No. 95)**

Question No: 2 (Marks: 1) - Please choose one

What would be the productivity if 9 workers installed 650 square yards of carpeting in 6 hours?

- ▶ **12.03 square yards/hr**
- ▶ 72.20 square yards/hr
- ▶ 108.30 square yards/hr
- ▶ 5850 square yards/hr

Ref: Productivity = Output Quantity / Input Quantity

Productivity = $650 / (9 * 6)$

Productivity = $650/54 = 12.03$ Square yards

Question No: 3 (Marks: 1) - Please choose one

All of the following are the decision areas of an operations manager EXCEPT:

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► **Financial reporting**

- Inventory management
- Scheduling tasks
- Supply chain management

Ref: Major operations decisions areas include inventory, capacity, quality, scheduling, process type, technology, location, layout, and supply chain management.
<http://en.allexperts.com/q/Management-Consulting-2802/2011/2/Production-Operations-Management-1.htm>

Question No: 4 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

- A factor which may be significant in other parts of the organization
- **A factor which gives an organization a competitive edge**
- A factor which serves as a minimum standard for purchase
- A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to be perceived as better than the competitor's services. **(Handouts Page No. 15)**

Question No: 5 (Marks: 1) - Please choose one

Which one of the following correctly explains the elements of a good forecast?

- Timely, having a purpose, accurate, written, reliable, meaningful
- Timely, accurate, judgmental, correctness, verbal, simple to use
- **Timely, accurate, reliable, meaningful, written, simple to use**
- Timely, accurate, reliable, consistent, meaningful, written, simple to use

Ref: Requirements of a Good Forecast

- Timely
- Reliable
- Accuracy.
- Meaningful
- Written/Documented.
- Simple **(Handouts Page No. 34)**

Question No: 6 (Marks: 1) - Please choose one

Which one of the following correctly explains the quantitative forecasting technique?

- **It consists mainly of numerical descriptions and resist subjective inputs of managers.**
- It consists mainly of subjective inputs and resist particular numerical descriptions.
- It consists mainly of subjective inputs and resist human factor, personal opinions.
- It consists mainly of analyzing objectives and hard data and resist human factor, opinion.

Ref: Quantitative research focuses on numbers or quantities. Quantitative studies have

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results that are based on numeric analysis and statistics. Often, these studies have many participants. It is not unusual for there to be over a thousand people in a quantitative research study. It is ideal to have a large number of participants because this gives analysis more statistical power.

http://www.associatedcontent.com/article/1622269/what_is_the_difference_between_qualitative.html

Question No: 7 (Marks: 1) - Please choose one

Which one of the following forecasting techniques uses explanatory variables to predict future demand?

- ▶ **Associative forecast**
- ▶ Time series forecast
- ▶ Consumer survey
- ▶ Executive opinion

Ref: Associative Models: forecasting technique that uses explanatory variables to predict future demand. <http://cramberry.net/sets/26728-operational-management-3>

Question No: 8 (Marks: 1) - Please choose one

Which one of the following involves completing a series of questionnaires each developed from the previous one, to achieve a consensus forecast?

- ▶ Consumer surveys
- ▶ Executive opinion
- ▶ Time series forecast
- ▶ **Delphi method**

Ref: Delphi method: Managers and staff complete a series of questionnaires, each developed from the previous one, to achieve a consensus forecast. **(Handouts Page No35)**

Question No: 9 (Marks: 1) - Please choose one

Which one of the following is a limitation of a moving average having a trend?

- ▶ **The forecast lags behind the actual**
- ▶ The forecast represents demand more accurately
- ▶ The forecast will not be accurate
- ▶ The forecast will not be reliable

Ref: If, over several periods, a time series shows a change in the average value which corresponds to the trend model, the forecast values always lag behind the actual values by one or several periods in the first-order exponential smoothing procedure. http://help.sap.com/saphelp_45b/helpdata/en/a5/6320e843a211d189410000e829fbbd/content.htm

Question No: 10 (Marks: 1) - Please choose one

Which one of the following forecasting techniques is used to identify a trend when data is neither growing nor declining rapidly and has no seasonal characteristics?

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► **Simple moving average**

- Delphi method
- Trend adjusted forecast
- Naïve forecast

Ref: The Moving Average model takes the average of several periods of data; the result is a dampened or smoothed data set; use this model when demand is stable and there is no evidence of a trend or seasonal pattern. <http://www.shmula.com/forecasting-unweighted-and-weighted-moving-average-model/308/>

Question No: 11 (Marks: 1) - Please choose one

Effective capacity is influenced by all of the following factors **EXCEPT**:

- Facilities
- **Product mix**
- Processes
- Operations

Ref: There are 7 determinants of effective capacity namely:

- Facilities.
- Product and service factors
- Process factors
- Human factors
- Operational factors
- Supply chain factors
- External factors

(Handouts Page No. 66 and 67)

Question No: 12 (Marks: 1) - Please choose one

Which one of the following stages of product life cycle relates to more predictable behavior in terms of capacity requirements?

- Introduction
- Growth
- **Maturity**
- Decline

Ref: Maturity Stage. As the products of firms move into the maturity stage, attracting highly skilled individuals is no longer as high a priority. Firms in the mature stage have an extensive internal labour market and extensive training and development programs. Firms in this stage may pay high wages to retain skilled talent. Economic downturns are handled by employee layoffs. Conflict resolutions and due process under collective bargaining are the grievance procedures with third party arbitration (Kochan & Chalykoff, 1985). **The environment (customer demand and competitors) becomes more stable and predictable (but as competitive) in comparison with the growth stage.**

<http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sjacksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=e>

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n&gl=pk&pid=bl&srcid=ADGEEsigJYxwqHconGqfCMjw0LjJ83rXBJuDpDj9ii07-2VUwmVTBF6K-

Xm7xu1THfTijPxrsbqKJD0KKZziOIaotlvC4pPqcxwZ2J3KdX3QIQo8iw3VCTRAsg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMIRvbg

Question No: 13 (Marks: 1) - Please choose one

Which one of the following statement is TRUE about cost-volume relationship?

- ▶ **It represents the relationship between cost, revenue and volume of output.**
- ▶ It represents the relationship between cost and volume of output.
- ▶ It represents the relationship between cost and revenue.
- ▶ It represents the relationship between inputs, cost and volume of output.

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. (Handouts Page No. 73)

Question No: 14 (Marks: 1) - Please choose one

Which one of the following refers to the volume of output at which total cost equals total revenue?

- ▶ Optimal operating rate
- ▶ **Break even point**
- ▶ Feasible volume
- ▶ Utilization

Question No: 15 (Marks: 1) - Please choose one

Which one of the following manufacturing process is associated with high volume car manufacture?

- ▶ Job shop
- ▶ **Assembly line**
- ▶ Batch
- ▶ Automation

Ref: Before discussing JIT look at in-line assembly systems (traditionally used in **high volume car manufacture**)

http://webcache.googleusercontent.com/search?q=cache:rJ2HjqtUCIQJ:www.ocr.org.uk/download/sm/ocr_13258_sm_gce_unit_f524.doc+%22manufacturing+process%22+for+%22high+volume+car+manufacture?%22&hl=en

Question No: 16 (Marks: 1) - Please choose one

Which one of the following statements is NOT correct about cycle time?

- ▶ It represents daily operating time divided by desired production
- ▶ It is the maximum allowable time at each work station
- ▶ It determines the time often items take to roll off in assembly line
- ▶ **It is the time required to complete a product from start to finish**

Ref: The cycle time is **not** the time required to complete a product from start to finish.

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This value would be the cycle time multiplied by the number of workstations.

<http://www.cbpa.ewu.edu/~pnemetzmills/OMch5/pracanswers.html> (See the Question No. 02)

Question No: 17 (Marks: 1) - Please choose one

Which one of the following layout type is associated with a restaurant?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ Product layout
- ▶ **Hybrid layout**

Ref: http://books.google.com.pk/books?id=sWtlOeC-3pEC&pg=PA111&lpq=PA111&dq=Hybrid+layout++is+associated+with+a+restaurant&source=bl&ots=sL8qmiQ-be&sig=nzSNWZT-NbCFBtjrw0k73nnMMGc&hl=en&ei=UHe4Tdu5GoLJhAenzpGXDw&sa=X&oi=book_result&ct=result&resnum=4&ved=0CCkQ6AEwAw#v=onepage&q&f=false

Question No: 18 (Marks: 1) - Please choose one

Which of the following layout types is associated with a supermarket?

- ▶ Fixed position layout
- ▶ **Process layout**
- ▶ Product layout
- ▶ Cellular layout

Ref: Supermarket layouts are essentially process layouts,
http://docs.google.com/viewer?a=v&q=cache:ISjqXnqJinsJ:hkilter.com/courses/541/isl541_06.ppt+Which+of+the+following+layout+types+is+associated+with+a+supermarket%3F+%E2%96%BAFixed+position+layout+%E2%96%BAProcess+layout+%E2%96%BAProduct+layout+%E2%96%BACellular+layout&hl=en&gl=pk&pid=bl&srcid=ADGEESgjL0-us6bizOKeoG1FGkiYM86aIVo2pXsLNVhz2QCo4kalE27S2tQ6SGYrSzkeJHrBPIQd8zLHJm81nlwYCUNOvk8tSFyigfDzc4g8VsRZepfWBN0HTMjj8J8Fghtf50D4L0VW&sig=AHIEtbTxrTJMUmkoZSV9o2BjZrPMqDx2HQ

Question No: 19 (Marks: 1) - Please choose one

Which one of the following layout types is associated with car assembly?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ **Product layout**
- ▶ Hybrid layout

Ref: Product – Layout should suit to the nature of product and its method of production. I.e. aircraft manufacturing and car manufacturing layouts will be different. Sales also affect the layout. <http://www.scribd.com/doc/7369836/Facility-Layout>

Question No: 20 (Marks: 1) - Please choose one

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In which one of the following techniques, the least squares method models uses one dependent and one or more independent variables?

- ▶ Trend adjusted forecast
- ▶ Simple moving average
- ▶ **Regression analysis**
- ▶ Exponential smoothing

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter9/multiple_choice_quiz.html (See the Question No. 02)

Question No: 21 (Marks: 1) - Please choose one

In exponential smoothing model, α denotes:

- ▶ **Smoothing constant**
- ▶ Actual forecast
- ▶ Forecast error
- ▶ Previous forecast

Ref: α = Alpha smoothing constant (Handouts page No. 40)

Question No: 22 (Marks: 1) - Please choose one

Which one of the following is responsible for administering environmental issues about product and service design?

- ▶ Central Board of Revenue
- ▶ **Environmental Protection Agency**
- ▶ Federal Drug Agency
- ▶ Occupational Safety Hygiene Administration

Ref: Environmental. Operations Manager should also work with in the same Environmental laws as his organization. EPA is active in all countries including Pakistan and even a CEO can be jailed if there is a failure to comply with the Environment laws. (HANDOUS PAGE NO. 47)

Question No: 23 (Marks: 1) - Please choose one

Which of the following takes into consideration the design of a esthetics of the product?

- ▶ Functional design
- ▶ Production design
- ▶ Service design
- ▶ **Product design**

Ref:

<http://books.google.com.pk/books?id=CFlyglsIINYC&pg=PA40&dq=design+of+aesthetics+of+the+product&hl=en&ei=gdZzTaWSNM6O4gb8pc3JDQ&sa=X&oi=boo#v=onepage&q=design%20of%20aesthetics%20of%20the%20product&f=false>

Question No: 24 (Marks: 1) - Please choose one

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Which of the following ensures that the design meets the performance characteristics that are specified in the product concept?

▶ **Functional design**

- ▶ Production design
- ▶ Service design
- ▶ Product design

Ref:

http://books.google.com/books?id=7m8VJP0I_ksC&pg=PA47&dq=design+meets+the+performance+characteristics+that+are+specified+in+the+product+concept&hl=en&ei=m8l0TduJJ8fKrAfEwuDSCg&sa=X&oi=book_result&ct=result&resnum=1&ved=0CCcQ6AEwAA#v=onepage&q=design%20meets%20the%20performance%20characteristics%20that%20are%20specified%20in%20the%20product%20concept&f=false

Question No: 25 (Marks: 1) - Please choose one

Which of the following factors are considered in product and service design?

- ▶ Customer satisfaction, quality, and improvement costs
- ▶ Employee motivation, quality, and production costs
- ▶ Customer satisfaction, flexibility, and production costs
- ▶ **Customer satisfaction, quality, and production costs**

Ref: A good product/service design can ensure customer satisfaction, quality and production costs. (Handouts Page No. 44)

Question No: 26 (Marks: 1) - Please choose one

CBR stands for which one of the following?

- ▶ Commercial board of revenue
- ▶ Central board of recycling
- ▶ Central board of renovation
- ▶ **Central board of revenue**

Ref: CBR denotes Center Board of Revenue (Handouts Page No. 46)

Question No: 27 (Marks: 1) - Please choose one

An automatic car wash is an example of which of the following?

- ▶ Customized service
- ▶ Batch processing
- ▶ Intermittent processing
- ▶ **Standardized service**

Ref: Standardized service implies that every customer or item processed receives essentially the same service. An automatic car wash is a good example.

<http://highered.mcgraw-hill.com/sites/dl/free/0070911894/90584/2ndSampleCh4.pdf>

Question No: 28 (Marks: 1) - Please choose one

Which one of the following statements relates to the final stage of product life cycle?

- ▶ Improve reliability, and reduce production costs

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► **Improve packaging and reliability**

- Improve reliability, and reduce quality
- Improve reliability, and reduce promotion costs

Ref: DECLINE: In this phase, most of the organizations adopt a defensive design R&D Strategy in an attempt to prolong the life of the product by employing new packaging, redesigning it, improving its reliability.

<http://www.websukat.com/TQM-product-life-cycle.htm>

Question No: 29 (Marks: 1) - Please choose one

Which one of the following statements is TRUE about product life cycle?

- It depicts demand of a product at various price levels
- **It depicts demand of a product with respect to time**
- It relates demand of a product to quality
- It relates demand of a product to market share

Ref: (See the handouts Page No.50 Diagrammed)

Question No: 30 (Marks: 1) - Please choose one

Technology has impacted the work place by:

- Adding to the existing geographical barriers for recruiting
- Increasing the cost of telecommuting
- Increasing the amount required to be spent on training
- **Unifying the workforce to a common skill level**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the Question No.10)

Question No: 31 (Marks: 1) - Please choose one

CPFR stands for which of the following?

- Collaborative Promotion, Forecasting, and Replenishment
- Collaborative Planning, Forecasting, and Reactivity
- Co-operative Planning, Function, and Replenishment
- **Collaborative Planning, Forecasting, and Replenishment**

Ref: CPFR is an acronym derived from the first letters of the following phrase: Collaborative Planning, Forecasting and Replenishment. (Handouts Page No. 177)

Question No: 32 (Marks: 1) - Please choose one

Forecasting accuracy has relation with time horizon.

- **Inverse**
- Linear
- Direct
- Parallel

Ref: Forecast accuracy decreases as time horizon increases indicating it is safe to make short range forecasts instead of long term forecasts. (Handouts Page No. 33)

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Question No: 33 (Marks: 1) - Please choose one

Which one of the following is a key benefit of process plant strategy?

- ▶ **Economies of scale**
- ▶ Diseconomies of scale
- ▶ Product variety
- ▶ Task specialization

Ref:

http://books.google.com/books?id=tqVIT0xE4NAC&pg=PA369&dq=key+benefit+of+process+plant+strategy&hl=en&ei=cjd1TaX5LIfrQeo39DRCg&sa=X&oi=book_result&ct=result&resnum=2&ved=0CDIQ6AEwAQ#v=onepage&q=key%20benefit%20of%20process%20plant%20strategy&f=false **(READ THE SECOND PARAGRAPH)**

Question No: 34 (Marks: 1) - Please choose one

Which one of the following is an assumption of center of gravity method?

- ▶ The quantity to be shipped is variable
- ▶ **The quantity to be shipped is fixed**
- ▶ The quantity carries no value
- ▶ The quantity to be shipped should be extraordinarily high

Ref:

http://books.google.com.pk/books?id=AbFUpMcYPZUC&pg=PA160&lpg=PA160&dq=center+of+gravity+method+quantity+to+be+shipped+is+fixed&source=bl&ots=D0NnQmf8Ds&sig=LOP6V_PWiWa9CxYDLBx3CAOqxM8&hl=en&ei=TzO0TfngAoKr8APpj4iWDA&sa=X&oi=book_result&ct=result&resnum=3&ved=0CCIQ6AEwAg#v=onepage&q=center%20of%20gravity%20method%20quantity%20to%20be%20shipped%20is%20fixed&f=false

Question No: 35 (Marks: 1) - Please choose one

Which of the following is the primary input in capacity planning?

- ▶ Supply chain capabilities
- ▶ Competitors' strengths
- ▶ **Demand forecasts**
- ▶ Overall cost estimates

Ref: Besides service level requirements, the other key input into the capacity planning process is a forecast or plan for the organization's future. Capacity planning is really just a process for determining the optimal way to satisfy business requirements such as forecasted increases in the amount of work to be done, while at the same time meeting service level requirements. <http://www.teamquest.com/pdfs/whitepaper/tqwp23.pdf>

Question No: 36 (Marks: 1) - Please choose one

The type of processing structure that is used for producing discrete products at higher volume is:

- ▶ Continuous Flow

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► **Assembly Line**

- Batch
- Job shop

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html (See the Question No. 3)

Question No: 37 (Marks: 1) - Please choose one

Quality, costs, lead times, operating resources are all related to which one of the following strategies.

- Organizational strategy
- Financial strategy
- **Operational strategy**
- Tactical strategy

Ref: OPERATIONS STRATEGY: (Deals with the operations aspect of an organization). OS is related to products, processes, methods, operating resources, quality, costs, lead times, and scheduling.

http://docs.google.com/viewer?a=v&q=cache:Z8OTKodTI24J:bulatov.org.ua/teaching_courses/nam_operations/L2%2520PRODUCTIVITY,%2520COMPETITIVENESS,%2520STRATEGY.doc+Quality,+costs,+lead+times,+operating+resources+are+all+related+to+Operational+strategy&hl=en&pid=bl&srcid=ADGEESjFppdZdPqJCYGeE5eZ0lbXSbBlaQuAZHRq8WGSAb060LQFyePsZ7uLK3tBxikelBwidDvqI2uehI7dlnTODYpZMU2xVYk6oWk7IHpLh4hW3Brot6pOUAe-f0XbM42tJV6kLRzg&sig=AHIEtbTIW5C5SYPMTZqjIHd9wX_vuoJE6g

Question No: 38 (Marks: 1) - Please choose one

The Strategies which are more focused on maintaining or improving the quality of an organization's products or services are known as:

- Quality at the source
- Time based strategies
- Cost leadership strategies
- **Quality-based strategies**

Ref: Quality-based strategies

Focuses on maintaining or improving the quality of an organization's products or services (Handouts Page No. 18)

Question No: 39 (Marks: 1) - Please choose one

Which of the following is **NOT** an attribute to classify services?

- **Tangibility**
- Perishability
- Simultaneity
- Courtesy

Ref: Services are all intangible. For example cleaning something or delivering a pizza

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they are services they don't produce anything.

<http://answers.yahoo.com/question/index?qid=20090320204146AAIPtZT>

Question No: 40 (Marks: 1) - Please choose one

Forecasting for groups tend to be more accurate than forecasting for individual items because:

- ▶ A group is composed of a number of items
- ▶ A group exhibits a uniform behavior
- ▶ **A group cancels the forecasting errors among items**
- ▶ A group behavior is relatively less uncertain

Ref: Forecasts more accurate for groups vs. individuals naturally because forecasting errors in a group tend to cancel out forecasting errors for individuals. (Handouts page No. 33)

Question No: 41 (Marks: 5)

How would you reveal the usefulness of naive forecasts?

- Naive forecasting (NF) techniques are quantitative forecasting tools that use only the historical data of the variable being forecasted in the analysis. Therefore, all other influences that may impact on the variable are excluded from the analysis and the forecast.
- NF provides a convenient way to generate quick and easy forecasts for the short time horizon.
- Forecast is not affected by environment.
- The forecast will miss turning points.

Question No: 42 (Marks: 5)

Which process system would you suggest for the following business/industry?

French restaurants	(Job Shop Process)
Heavy equipment	(Batch Flow Process)
Sugar refinery	(Continuous Flow Process)
Automobile assembly	(Product layout)
Commercial printer	(Job Shop Process)

Paper No. 13

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 4)

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Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Who developed the use of standardization in large-scale mass production using a moving assembly line?

- ▶ Frederick Winslow Taylor
- ▶ Frank Gilbreth
- ▶ Adam Smith
- ▶ **Henry Ford**

Ref: Mass production (also called **flow production, repetitive flow production, series production, or serial production**) is the production of large amounts of standardized products, including and especially on assembly lines. Mass production was popularized in the 1910s and 1920s by Henry Ford's Ford Motor Company, which introduced electric motors to the then-well-known technique of chain or sequential production.

http://en.wikipedia.org/wiki/Mass_production

OR

http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html (See the **Question No. 05**)

Question No: 2 (Marks: 1) - Please choose one

The management of systems or processes that creates goods and provides services is known as:

- ▶ **Operation Management**
- ▶ Operation/production Management
- ▶ Operation/Research Management
- ▶ Production/Research Management

Ref: Operations Management (The management of systems or processes that create goods and/or provide services) (**Handouts Page No. 03**)

Question No: 3 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

- ▶ A factor which may be significant in other parts of the organization
- ▶ **A factor which gives an organization a competitive edge**
- ▶ A factor which serves as a minimum standard for purchase
- ▶ A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to be perceived as better than the competitor's services. (**Handouts Page No. 15**)

Question No: 4 (Marks: 1) - Please choose one

Which one of the following correctly explains the quantitative forecasting technique?

- ▶ **It consists mainly of numerical descriptions and resist subjective inputs of managers.**

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- ▶ It consists mainly of subjective inputs and resist particular numerical descriptions.
- ▶ It consists mainly of subjective inputs and resist human factor, personal opinions.
- ▶ It consists mainly of analyzing objectives and hard data and resist human factor, opinion.

Ref: Quantitative research focuses on numbers or quantities. Quantitative studies have results that are based on numeric analysis and statistics. Often, these studies have many participants. It is not unusual for there to be over a thousand people in a quantitative research study. It is ideal to have a large number of participants because this gives analysis more statistical power.

http://www.associatedcontent.com/article/1622269/what_is_the_difference_between_qualitative.html

Question No: 5 (Marks: 1) - Please choose one

Which one of the following is a pessimistic approach in decision making theory?

- ▶ **Maximin**
- ▶ Maximax
- ▶ Minimax regret
- ▶ Laplace

Ref: Maximin

- Maximin determines the worst payoff for each alternative; the operations manager chooses the best worst alternative. Meaning the least (best) of the worst.
- It is a pessimistic approach.
- Ensures a guaranteed minimum (Handouts Page No. 26)

Question No: 6 (Marks: 1) - Please choose one

In which one of the following decision environments it is impossible to assess the likelihood of various future events?

- ▶ Risk
- ▶ Bounded rationality
- ▶ Certainty
- ▶ **Uncertainty**

Ref: Uncertainty: environments it is impossible to assess the likelihood of various future events. <http://nrmt.files.wordpress.com/2011/04/15-decision-making-strategies.pdf>

Question No: 7 (Marks: 1) - Please choose one

Given the table:

Possible	Alternatives future demand	
	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000

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Large facility	18,000	15,000
----------------	--------	--------

Which one of the following is the correct payoff under LAPLACE approach?

- ▶ Rs. 9,000
- ▶ Rs. 16,000
- ▶ Rs. 33,000
- ▶ **Rs. 16,500**

Ref: Take average for each alternative and choose the alternative with best average.

Small facility = $10000+8000=18000/2=9000$

Medium facility = $12000+20000=32000/2=16000$

Large facility = $18000+15000=33000/2=16500$

Question No: 8 (Marks: 1) - Please choose one

Which one of the following is an index used to measure actual output relative to design capacity?

- ▶ Efficiency
- ▶ Effective capacity
- ▶ Effectiveness
- ▶ **Utilization**

Ref: It can be expressed as a ratio, where utilization = actual output divided by design capacity. This measure is used in both capacity planning and capacity requirements planning processes. <http://www.bnet.com/topics/capacity+utilization>

Question No: 9 (Marks: 1) - Please choose one

Effective capacity is influenced by all of the following factors **EXCEPT**:

- ▶ Facilities
- ▶ **Product mix**
- ▶ Processes
- ▶ Operations

Ref: There are 7 determinants of effective capacity namely:

- Facilities.
- Product and service factors
- Process factors
- Human factors
- Operational factors
- Supply chain factors
- External factors

(Handouts Page No. 66 and 67)

Question No: 10 (Marks: 1) - Please choose one

ABC Corporation has planned to purchase a new machine. Total annual fixed cost is Rs. 10,000, variable cost is Rs. 5 per unit and revenue is Rs. 7 per unit. What would be the break even point?

- ▶ 833 units

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▶ 2000 units

▶ **5000 units**

▶ 1012 units

Ref: $QBEP = FC / (R - VC)$

$QBEP = 10000 / (7-5)$

$QBEP = 10000/2$

QBEP = 5000 Units

Question No: 11 (Marks: 1) - Please choose one

Which of the following terms of financial analysis are important for the organization to proceed with a capacity alternative decision?

▶ Cash flow and fixed cost

▶ Present value and fixed cost

▶ **Cash flow and present value**

▶ Cash flow and profit

Ref: Operations manager along with managerial accountant often work to calculate what cash flow or present value in terms of rupees is available for the organization to proceed with a capacity alternative decision. **(Handouts Page No. 76)**

Question No: 12 (Marks: 1) - Please choose one

The process selection should take into account all of the following EXCEPT:

▶ Capacity planning

▶ Design of work systems

▶ **Production forecasts**

▶ Selection of technology

Ref: Process Selection refers to the way an organization chooses to produce its good or services. It takes into account selection of technology, capacity planning, layout of facilities, and design of work systems. **(Handouts Page No. 77)**

Question No: 13 (Marks: 1) - Please choose one

Which one of the following is an example of business that uses job shop process structure?

▶ **French restaurants**

▶ Heavy equipment

▶ Sugar refinery

▶ Automobile assembly

Ref: Examples of a job shop include a machine tool shop, a factory machining center, paint shops, a French restaurant, a commercial printing shop, and other manufacturers that make custom products in small lot sizes. <http://www.enotes.com/small-business-encyclopedia/job-shop>

Question No: 14 (Marks: 1) - Please choose one

Assembly lines relate most closely to a:

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- ▶ Functional layout
- ▶ **Product layout**
- ▶ Process layout
- ▶ Departmental layout

Ref: Assembly lines are a special case of product layout. In a general sense, the term assembly line refers to progressive assembly linked by some material handling device.

http://docs.google.com/viewer?a=v&q=cache:3jUTDWx2e4IJ:www.ateneonline.it/chase2e/studenti/tn/6184-7_tn05.pdf+Assembly+lines+relate+most+closely+to+a+%E2%96%BA+Functional+layout+%E2%96%BA+Product+layout+%E2%96%BA+Process+layout+%E2%96%BA+Departmental+layout&hl=en&gl=pk&pid=bl&srcid=ADGEESh8r19njYE70vMpgQzCTpHYGtIHlnmve9br89oTuU_polHaRdl1wM9dTpef325TYLnQrGfqLLZQN7v1tHTYHdzlBcO_H-HqJsTShQcxtKw8_4hfncmLzFGuSbmRyBtQgm3VrYB2&sig=AHIEtbRFRHNLG1Fl6jhNIX6n128_iEgUMg

Question No: 15 (Marks: 1) - Please choose one

Which one of the following mathematical expressions can be used to compute output capacity?

- ▶ **OT/CT**
- ▶ CT/OT
- ▶ CT+OT
- ▶ CT-OT

Ref: $OC = \text{Output Capacity} = OT/CT$ (HANDOUTS PAGE NO. 85)

Question No: 16 (Marks: 1) - Please choose one

Which one of the following is an application of simple exponential smoothing?

- ▶ Establishing durability
- ▶ Finding reliability
- ▶ **Scheduling services**
- ▶ Quality improvement

Question No: 17 (Marks: 1) - Please choose one

Which of the following forecasting technique is based on the assumption that past data is more indicative of the future than the most recent occurrences?

- ▶ **Exponential smoothing**
- ▶ Linear regression
- ▶ Judgmental forecast
- ▶ Naive forecast

Ref: In many applications (perhaps in most), the most recent occurrences are more indicative of the future than those in the more distant past. If this premise is valid – “that the importance of data diminishes as the past becomes more distant” - then exponential smoothing may be the most logical and easiest method to use.

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Question No: 18 (Marks: 1) - Please choose one

Which of the following factors are considered in product and service design?

- ▶ Customer satisfaction, quality, and improvement costs
- ▶ Employee motivation, quality, and production costs
- ▶ Customer satisfaction, flexibility, and production costs
- ▶ **Customer satisfaction, quality, and production costs**

Ref: A good product/service design can ensure customer satisfaction, quality and production costs. **(Handouts Page No. 44)**

Question No: 19 (Marks: 1) - Please choose one

Which one of the following refers to using some of the components of old products in the manufacturing of new products?

- ▶ Manufacturability
- ▶ **Remanufacturing**
- ▶ Robust design
- ▶ Automation

Ref: Design for Remanufacturing: Using some of the components of the old products in the manufacture of new products. **(Handouts Page No. 51)**

Question No: 20 (Marks: 1) - Please choose one

Which one of the following mathematical expressions can be used to compute availability?

- ▶ **$(MTBF) / (MTBF + MTR)$**
- ▶ $(MTBF) / (MTBF - MTR)$
- ▶ $(MTR) / (MTBF + MTR)$
- ▶ $(MTR) / (MTBF - MTR)$

Ref: Availability = $(MTBF) / (MTBF + MTR)$ **(Handouts Page No. 63)**

Question No: 21 (Marks: 1) - Please choose one

Which one of the following is a curve showing failure rate over time?

- ▶ Cost curve
- ▶ **Bath tub curve**
- ▶ Fish bone diagram
- ▶ Reliability curve

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Ref: The figure above shows a bathtub shape and thus rightly is referred to as the Bathtub curve. On the Y axis we represent the Failure rate and on the X axis we represent the Time. **(Handouts Page No. 60)**

Question No: 22 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 350 hours between repairs, and the mean repair time is expected to be 3 hours?

▶ **0.99**

▶ 1.0

▶ 3.0

▶ 7.03

Ref: Availability = (MTBF) / (MTBF + MTR)

$$\text{Availability} = (350) / (350+3)$$

$$\text{Availability} = 350 / 353$$

$$\text{Availability} = 0.99$$

Question No: 23 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 300 hours between repairs, and the mean repair time is expected to be 2 hours?

▶ 6.02

▶ 2.0

▶ **0.99**

▶ 0.006

Ref: Availability = (MTBF) / (MTBF + MTR)

$$\text{MTBF} = \text{Mean time between factor} = 300$$

$$\text{MTR} = \text{Mean repair time} = 2 \text{ hours}$$

$$\text{Availability} = (300) / (300+2)$$

$$\text{Availability} = 300 / 302$$

$$\text{Availability} = 0.99$$

Question No: 24 (Marks: 1) - Please choose one

Which of the following is NOT an emerging trend in the workplace?

▶ Increasing workplace diversity

▶ **Decreasing work schedule flexibility**

▶ Increasing number of part time jobs

▶ Increasing use of temporary labor

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the

Question No. 09)

Question No: 25 (Marks: 1) - Please choose one

Which one of the following is NOT a business application of forecasting?

▶ Budgeting

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- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Quality control**

Ref: Forecasting in business forms the basis for budgeting and planning for capacity, sales, production, inventory, manpower, purchasing and more. **(Handouts Page No. 31)**

Question No: 26 (Marks: 1) - Please choose one

Which one of the following factors makes a forecast LESS perfect?

- ▶ **Randomness**
- ▶ Non serious attitude
- ▶ Non availability of data
- ▶ Un qualified personnel

Ref: Forecasts rarely perfect because of RANDOMNESS (having no specific pattern). Allowances should be made for inaccuracies. **(Handouts Page No. 33)**

Question No: 27 (Marks: 1) - Please choose one

Which one of the following is an example of regional factors that affect location decisions?

- ▶ Transportation
- ▶ Quality of life
- ▶ Development support
- ▶ **Location of new markets**

Ref: Regional Factors

5. Location of raw materials
6. Location of markets
7. Labor factors
8. Climate and taxes **(Handouts Page No. 96)**

Question No: 28 (Marks: 1) - Please choose one

Which one of the following location strategies is favored by automobile manufacturers?

- ▶ Product plant strategy
- ▶ **Process plant strategy**
- ▶ Market area plant strategy
- ▶ Cost conservation strategy

Ref: Process plant strategy: (Sharing of Problems/Improvements among plants) in this different plants concentrate on different aspects of a process. E.g. Automobile manufacturers use this approach with different plants for Engines, Transmissions, Body Stamping, and Radiators.

<http://www.scribd.com/doc/50297174/11/Multiple-Plant-Strategies>

Question No: 29 (Marks: 1) - Please choose one

Which one of the following is a key benefit of process plant strategy?

- ▶ **Economies of scale**

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- ▶ Diseconomies of scale
- ▶ Product variety
- ▶ Task specialization

Ref:

http://books.google.com/books?id=tqVIT0xE4NAC&pg=PA369&dq=key+benefit+of+process+plant+strategy&hl=en&ei=cjd1TaX5LIfNrQeo39DRCg&sa=X&oi=book_result&ct=result&resnum=2&ved=0CDIQ6AEwAQ#v=onepage&q=key%20benefit%20of%20process%20plant%20strategy&f=false **(READ THE SECOND PARAGRAPH)**

Question No: 30 (Marks: 1) - Please choose one

Which one of the following statements is **true** about Occupational Safety Hygiene Administration (OSHA)?

- ▶ **To safeguard against potential hazards**
- ▶ To develop cost effective processes
- ▶ To implement legal standards
- ▶ To carry out implication of manufacturability and fitness

Ref: Under the OSH Act, OSHA develops and sets mandatory occupational safety and health requirements applicable to the more than 6 million workplaces in the U.S. OSHA relies on, among many others, industrial hygienists to evaluate jobs for potential health hazards.

<http://www.laborcommission.utah.gov/UOSH/Outreach/ConstructionCD/www.osha.gov/SLTC/smallbusiness/sec5.html>

Question No: 31 (Marks: 1) - Please choose one

Which one of the following is NOT an input in the transformation process?

- ▶ Information
- ▶ Services
- ▶ **Facilities**
- ▶ Materials

Ref: Inputs include materials, inventory, services, and land, and energy, human and capital resources. **(Handouts Page No. 02)**

ALSO SEE THIS LINK FOR FURTHER EXPLANATION:

<http://www.jpcmediallc.com/acrobat/managment.pdf>

Question No: 32 (Marks: 1) - Please choose one

Forecasting for groups tend to be more accurate than forecasting for individual items because:

- ▶ A group is composed of a number of items
- ▶ A group exhibits a uniform behavior
- ▶ **A group cancels the forecasting errors among items**
- ▶ A group behavior is relatively less uncertain

Ref: Forecasts more accurate for groups vs. individuals naturally because forecasting errors in a group tend to cancel out forecasting errors for individuals. **(Handouts page**

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No. 33)

Question No: 33 (Marks: 1) - Please choose one

Which one of the following is a possible disadvantage of a moving average forecast?

- ▶ The method is unable to forecast the demand accurately
- ▶ The method is easy to compute and easy to understand
- ▶ **All the values in the average are weighted equally**
- ▶ The most recent values are given the more weightage

Ref: One disadvantage of using moving averages for forecasting is that in calculating the average all the observations are given equal weight.

<http://people.brunel.ac.uk/~mastjjb/jeb/or/forecast.html>

Question No: 34 (Marks: 1) - Please choose one

The purpose of _____ is to coordinate and control all the required sources so that productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control
- ▶ **Demand management**
- ▶ Forecasting
- ▶ Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvgP9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=true

Question No: 35 (Marks: 1) - Please choose one

Which one of the following forecasting methods uses subjective inputs such as opinions from consumer surveys, sales staff, managers and experts?

- ▶ Time series model
- ▶ Least Square method
- ▶ **Judgmental forecasting model**
- ▶ Associative forecasting model

Ref: Judgmental - uses subjective inputs meaning that a judgmental forecast rely on analysis of subjective inputs obtained from various sources, such as consumer surveys, the sales staff, managers and executives, and panels of experts. These insights are not available publicly. **(Handouts Page No. 35)**

Question No: 36 (Marks: 1) - Please choose one

Which of the following is a technique that averages a number of recent actual values that

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are updated as new values become available?

► **Simple moving average**

- Delphi method
- Trend adjusted forecast
- Naïve forecast

Ref: Moving average – A technique that averages a number of recent actual values, updated as new values become available. (Handouts Page No. 37)

Question No: 37 (Marks: 1) - Please choose one

Which one of the following statement is TRUE about cost-volume relationship?

► **It represents the relationship between cost, revenue and volume of output.**

- It represents the relationship between cost and volume of output.
- It represents the relationship between cost and revenue.
- It represents the relationship between inputs, cost and volume of output.

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. (Handouts Page No. 73)

Question No: 38 (Marks: 1) - Please choose one

Which one of the following statements represents use of cost-volume analysis?

- It is a tool for reliability measurement
- It provides a base for marketing research
- **It helps in comparing capacity alternatives**
- It is important in product design

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. The primary purpose of cost volume analysis is to estimate the income of an organization under different operating conditions. It is particularly useful as a tool for comparing capacity alternatives. (Handouts Page No. 73)

Question No: 39 (Marks: 1) - Please choose one

Which one of the following best describes the cellular layout?

- It groups machines into departments according to their function.
- **It groups machines into small assembly lines that produce families of parts.**
- It allows production of larger lots by reducing set-up time.
- It encourages the use of large, efficient machinery.

Ref: <http://cwx.prenhall.com/bookbind/pubbooks/russell/chapter7/multiple1/deluxe-content.html> (See the Question No. 03)

Question No: 40 (Marks: 1) - Please choose one

Transportation method helps in solving which of the following problems?

- **Facility location problems**
- Allocation of cost problems
- Workforce management problems
- Unfamiliar laws and regulations problems

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Ref: Transportation Method is a quantitative approach that can help solve multiple facility location problems. (Handouts Page No. 98)

Question No: 41 (Marks: 5)

ABC Corporation has planned to purchase a new machine. Total annual fixed cost is Rs. 15,000; variable cost is Rs. 5 per unit and revenue is Rs. 7 per unit.

- What would be the break even point?
- What would be the breakeven point if variable cost gets increased by 10%, revenue decreased by 10% and fixed remains same?

Part A:

$Q = \text{Fixed Cost} / \text{Revenue} - \text{Variable Cost}$

$Q = 15000 / 7.5$

Q = 7500 units

Part B:

$Q = \text{Fixed Cost} / \text{Revenue} - \text{Variable Cost}$

$Q = 15000 / 7 - 0.7 - (5 + 0.5)$

$Q = 15000 / 6.3 - 5.5$

$Q = 15000 / 0.8$

Q = 18750 units

Question No: 42 (Marks: 5)

What is demand management? Explain its various factors?

Demand Management:

Demand management is the process of cutting cost by influencing the quantity and/or specification of the products and services you are procuring.

The following are the Factors of Demand Management:

- Finished Goods/Services
- Raw Material
- Component Parts
- Sub-Assemblies etc

Paper No. 14

MIDTERM EXAMINATION Spring 2009
MGT613- Production / Operation Management (Session - 2)

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Question No: 1 (Marks: 1) - Please choose one

Within the operations function, which one of the following is a long-term management decision?

- ▶ Control decision
- ▶ Non-operational decision
- ▶ **Strategic decision**
- ▶ Tactical decision

Ref: Strategic Importance

1. Long term commitment/costs
2. Impact on investments, revenues, and operations
3. Supply chains (Handouts Page No. 95)

Question No: 2 (Marks: 1) - Please choose one

Which one of the following forms of productivity has units of output per shift?

- ▶ Capital
- ▶ Energy
- ▶ **Labor**
- ▶ Machine

Ref: Labor Productivity:

- Units of output per labor hour
- Units of output per shift
- Value-added per labor hour (Handouts Page No. 19)

Question No: 3 (Marks: 1) - Please choose one

Which one of the following is a measure of productivity that involves measuring inputs and outputs using a common unit of measurement?

- ▶ **Multifactor**
- ▶ Partial
- ▶ Single
- ▶ Total

Ref: Calculations of multifactor productivity measure inputs and outputs using a common unit of measurement, such as cost. For instance, the measure might use cost of inputs and units of the output:

http://docs.google.com/viewer?a=v&q=cache:bYWPp-Ig99IJ:highered.mcgraw-hill.com/sites/dl/free/0073525251/886181/stevenson11e_sample_ch02.pdf+Multifactor+is+a+measure+of+productivity+that+involves+measuring+inputs+and+outputs+using+a+common+unit+of+measurement&hl=en&gl=pk&pid=bl&srcid=ADGEEShIkJnaEXjh-LIA3HACWDXOFhSy4GxPv8YQXZJIU3WT0go2JJj8vnbbzyuq3hxydg1DjvPnqXn6l7_WK80EPHn15OYu_iNw-luxMf0zGIxME7Z2JTjx1YPoSJERrLKF0cWbvkXb&sig=AHIEtbTWWf1ESOM052Hr

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kqk5mCU24fLbQA

Question No: 4 (Marks: 1) - Please choose one

The major business function consisting of research and development, product design, manufacturing, marketing, distribution, and customer service is refers to:

- ▶ Value chain
- ▶ The transformation process
- ▶ Quality control
- ▶ **Life cycle**

Ref:

<http://books.google.com.pk/books?id=f5p17Sz5NLMC&pg=PA379&lpg=PA379&dq=of+research+and+development#v=onepage&q=of%20research%20and%20development&f=false>

Question No: 5 (Marks: 1) - Please choose one

A business process is a logical set of tasks or activities that:

- ▶ Are specific to the operations function
- ▶ Are specific to the marketing function
- ▶ **Are interdependent with other processes**
- ▶ Have exactly the same performance measures for any process

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter5/multiple_choice_quiz.html

(See the Question No. 05)

Question No: 6 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute value?

- ▶ $(\text{Quality} + \text{Speed} - \text{Flexibility}) / \text{Cost}$
- ▶ **$(\text{Quality} + \text{Speed} + \text{Flexibility}) / \text{Cost}$**
- ▶ $(\text{Quality} + \text{Speed} - \text{Cost}) / \text{Flexibility}$
- ▶ $(\text{Quality} + \text{Speed} + \text{Cost}) / \text{Flexibility}$

Ref: $\text{Value} = \text{Performance} / \text{Cost} = (\text{Quality} + \text{Speed} + \text{Flexibility}) / \text{Cost}$
(Handouts page No. 10)

Question No: 7 (Marks: 1) - Please choose one

Which one the following formula or function can be used to measure the performance?

- ▶ Flexibility + profit+ operations
- ▶ Work + profit + value
- ▶ **Quality + speed + flexibility**
- ▶ Profit + Incentives + standards

Ref: $\text{Value} = \text{Performance} / \text{Cost} = (\text{Quality} + \text{Speed} + \text{Flexibility}) / \text{Cost}$
(Handouts page No. 10)

Question No: 8 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

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- ▶ A factor which may be significant in other parts of the organization
- ▶ **A factor which gives an organization a competitive edge**
- ▶ A factor which serves as a minimum standard for purchase
- ▶ A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to be perceived as better than the competitor's services. (Handouts Page No. 15)

Question No: 9 (Marks: 1) - Please choose one

As a manager, you have defined the purpose of the forecasts. What should be the **next** step in forecasting process?

- ▶ Choose a forecasting technique.
- ▶ Determine the purpose of the forecast.
- ▶ **Set up a time horizon or a time limit.**
- ▶ Collect and analyze the appropriate data.

Ref: Steps in the Forecasting Process:

- **Determine the purpose of the forecast:** meaning what is the purpose and when will it be required. This will provide the level of detail for resources required man, machine, time and capital.
- **Establish a time horizon:** We already know that as time increases the accuracy of the Forecast decreases.
- **Select a forecasting technique:** whether qualitative or quantitative
- **Gather and analyze the appropriate data:** It goes without saying that before a forecast can be delivered data is required. The closer the real life data more realistic would be the forecast. This may be the time when you would like to identify the important assumptions and suppositions.
- **Prepare the forecast:**
- **Monitor the forecast:** A forecast has to be closely monitored to determine whether it is fulfilling its basic purpose. This helps in re-examining the method, assumptions and validity of the data and preparing a revised forecast.

Question No: 10 (Marks: 1) - Please choose one

Which one of the following forecasting technique is based on historical data?

- ▶ **Time series**
- ▶ Qualitative
- ▶ Judgmental
- ▶ Associative

Ref: Time series - uses historical data assuming the future will be like the past and depend on developing relationships between variables that can be expressed to predict future values. (Handouts page no. 35)

Question No: 11 (Marks: 1) - Please choose one Which one of the following Which one of the following forecasting techniques use subjective inputs su from consumer

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surveys, sales staff, managers and experts?

- ▶ Time series
- ▶ Quantitative
- ▶ **Judgmental**
- ▶ Associative

Ref: Judgmental - uses subjective inputs meaning that a judgmental forecast rely on analysis of subjective inputs obtained from various sources, such as consumer surveys, the sales staff, managers and executives, and panels of experts. These insights are not available publicly. **(Handouts Page No. 35)**

Question No: 12 (Marks: 1) - Please choose one

Which of the following approaches favors adopting a “go for it” strategy?

- ▶ Maximin
- ▶ **Maximax**
- ▶ Minimax regret
- ▶ Laplace

Ref: Maximax:

- Maximax determines
- the best possible outcome
- Choose the Alternative with the best possible payoff.
- It does not take into account any other alternative then the best payoff.
- An optimistic approach.
- Go for it strategy. **(Handouts Page No. 26)**

Question No: 13 (Marks: 1) - Please choose one

Given the table:

Alternatives Possible future demand

	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000
Large facility	18,000	15,000

Which one of the following is the correct payoff under MAXIMAX approach?

- ▶ Rs. 10,000
- ▶ Rs. 18,000
- ▶ **Rs. 20,000**
- ▶ Rs. 32,000

Ref: Choose the Best maximum Value for MAXIMAX approach.

Question No: 14 (Marks: 1) - Please choose one

Which one of the following is NOT a step of decision making process?

- ▶ Develop alternatives
- ▶ Monitor results
- ▶ **Consider risk averseness strategies**

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- Specify criteria for decision

Ref: Normally the decision making process involves the following six important steps

7. Specify Objectives and the Criteria for decision making
8. Develop Alternatives
9. Analyze and compare alternatives.
10. Select the best alternative.
11. Implement the chosen Alternative
12. Monitor the results to ensure the desired results are achieved.

(Handouts Page No. 24)

Question No: 15 (Marks: 1) - Please choose one

Which one of the following stages of product life cycle relates to more predictable behavior in terms of capacity requirements?

- Introduction
- Growth
- **Maturity**
- Decline

Ref: Maturity Stage. As the products of firms move into the maturity stage, attracting highly skilled individuals is no longer as high a priority. Firms in the mature stage have an extensive internal labour market and extensive training and development programs. Firms in this stage may pay high wages to retain skilled talent. Economic downturns are handled by employee layoffs. Conflict resolutions and due process under collective bargaining are the grievance procedures with third party arbitration (Kochan & Chalykoff, 1985). **The environment (customer demand and competitors) becomes more stable and predictable (but as competitive) in comparison with the growth stage.**

<http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sja cksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=en&gl=pk&pid=bl&srcid=ADGEESigJYxwqHconGqfCMjw0LjJ83rXBJuDpDj9ii07-2VUwmVTBF6K-Xm7xu1THfTijPxrsbqKJD0KKZziOIaotlvC4pPqcwxZ2J3KdX3QIQo8iw3VCTRA sXg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMIRvbg>

Question No: 16 (Marks: 1) - Please choose one

Which one of the following statement is TRUE about cost-volume relationship?

- **It represents the relationship between cost, revenue and volume of output.**
- It represents the relationship between cost and volume of output.
- It represents the relationship between cost and revenue.
- It represents the relationship between inputs, cost and volume of output.

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. **(Handouts Page No. 73)**

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Question No: 17 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute break even point?

▶ $Q = VC / (R - VC)$

▶ **$Q = FC / (R - VC)$**

▶ $Q = VC / (R + FC)$

▶ $Q = FC / (R + VC)$

Ref: QBEP = FC / (R - VC) (Handouts Page No. 76)

Question No: 18 (Marks: 1) - Please choose one

ABC Corporation has planned to purchase a new machine. Total annual fixed cost is Rs. 10,000, variable cost is Rs. 5 per unit and revenue is Rs. 7 per unit. What would be the break even point?

▶ 833 units

▶ 2000 units

▶ **5000 units**

▶ 1012 units

Ref: QBEP = FC / (R - VC)

QBEP = 10000 / (7 - 5)

QBEP = 10000 / 2

QBEP = 5000 Units

Question No: 19 (Marks: 1) - Please choose one

Which of the following terms of financial analysis are important for the organization to proceed with a capacity alternative decision?

▶ Cash flow and fixed cost

▶ Present value and fixed cost

▶ **Cash flow and present value**

▶ Cash flow and profit

Ref: Operations manager along with managerial accountant often work to calculate what cash flow or present value in terms of rupees is available for the organization to proceed with a capacity alternative decision. (Handouts Page No. 76)

Question No: 20 (Marks: 1) - Please choose one

Which of the following is a system designed to coordinate all activities and information needed to complete business processes?

▶ **Enterprise resource planning**

▶ Supply chain management

▶ New product development

▶ Customer relationship management

Ref: Enterprise resource planning (ERP) is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes such as order fulfillment or billing.

<http://www.zbeanztech.com/open-source-erp>

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Question No: 21 (Marks: 1) - Please choose one

Which of the following is **NOT** a characteristic of product layouts?

- ▶ **High material handling costs**
- ▶ Sequential arrangement of machines
- ▶ Standardized output
- ▶ Continuous production system

Ref: <http://www.authorstream.com/Presentation/partha.chatterjee004-831897-plant-layout/>
(See the Slide No. 5 and 6)

Question No: 22 (Marks: 1) - Please choose one

Which one of the following layout types is associated with car assembly?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ **Product layout**
- ▶ Hybrid layout

Ref: Product – Layout should suit to the nature of product and its method of production. I.e. aircraft manufacturing and car manufacturing layouts will be different. Sales also affect the layout. <http://www.scribd.com/doc/7369836/Facility-Layout>

Question No: 23 (Marks: 1) - Please choose one

In exponential smoothing model, α denotes:

- ▶ **Smoothing constant**
- ▶ Actual forecast
- ▶ Forecast error
- ▶ Previous forecast

Ref: α = Alpha smoothing constant (Handouts page No. 40)

Question No: 24 (Marks: 1) - Please choose one

Which one of the following designs resists modifications?

- ▶ **Frozen design**
- ▶ Product design
- ▶ Service design
- ▶ Robust design

Ref: Another disadvantage is that a manufacturer may freeze (standardize) a **design** prematurely and, once the **design is frozen**, it may find compelling reasons to resist modification.

http://webcache.googleusercontent.com/search?q=cache:ASewL4qNRRkJ:highered.mcgraw-hill.com/sites/dl/free/0073041912/354902/ste41912_ch04.pdf+Frozen+design+%E2%96%BA+Product+design+%E2%96%BA+Service+design+%E2%96%BA+Robust+design+resists+modifications&cd=3&hl=en&ct=clnk&gl=pk&source=www.google.com.pk

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Question No: 25 (Marks: 1) - Please choose one

Which one of the following is TRUE about Taguchi Approach?

▶ **To test the robustness of a design**

▶ To articulate the “voice of the customer”

▶ To reduce the degree of automation

▶ To create a concurrent design

Ref: The defining characteristics for the Taguchi approach include:

- Design a robust product
- Insensitive to environmental factors either in manufacturing or in use.
- Central feature is Parameter Design. **(Handouts Page No. 52)**

Question No: 26 (Marks: 1) - Please choose one

Which one of the following refers to using some of the components of old products in the manufacturing of new products?

▶ Manufacturability

▶ **Remanufacturing**

▶ Robust design

▶ Automation

Ref: Design for Remanufacturing: Using some of the components of the old products in the manufacture of new products. **(Handouts Page No. 51)**

Question No: 27 (Marks: 1) - Please choose one

Which one of the following is a curve showing failure rate over time?

▶ Cost curve

▶ **Bath tub curve**

▶ Fish bone diagram

▶ Reliability curve

Ref: The figure above shows a bathtub shape and thus rightly is referred to as the Bath tub curve. On the Y axis we represent the Failure rate and on the X axis we represent the Time. **(Handouts Page No. 60)**

Question No: 28 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 250 hours between repairs, and the mean repair time is expected to be 3 hours?

▶ 1.01

▶ 5.03

▶ 3.0

▶ **0.98**

Ref: Availability = (MTBF) / (MTBF + MTR)

Availability = 250 / (250+3)

Availability = 250 / 253 = **0.98**

Question No: 29 (Marks: 1) - Please choose one

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Which one of the following is the goal of method analysis?

► **Dividing and analyzing a job**

- Check individual human motions used to perform an operation
- Determining the length of time it will take to undertake a particular task
- Determining the amount of time a worker spends on various activities

Ref: Design of Work Systems is used to describe the two basic approaches to job design.
(Handouts Page No. 87)

Question No: 30 (Marks: 1) - Please choose one

Which one of the following is an example of regional factors that affect location decisions?

- Transportation
- Quality of life
- Development support
- **Location of new markets**

Ref: Regional Factors

9. Location of raw materials
 10. Location of markets
 11. Labor factors
 12. Climate and taxes
- (Handouts Page No. 96)**

Question No: 31 (Marks: 1) - Please choose one

Which one of the following is an example of site related factors that affect location decision?

- **Transportation**
- Quality of life
- Location of new markets
- Location of raw materials

Ref: Site Related Factors

- Land
 - Transportation
 - Environmental
 - Legal
- (Handouts Page No. 96)**

Question No: 32 (Marks: 1) - Please choose one

Which one of the following statements is **true** about Occupational Safety Hygiene Administration (OSHA)?

- **To safeguard against potential hazards**
- To develop cost effective processes
- To implement legal standards
- To carry out implication of manufacturability and fitness

Ref: Under the OSH Act, OSHA develops and sets mandatory occupational safety and health requirements applicable to the more than 6 million workplaces in the U.S. OSHA

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relies on, among many others, industrial hygienists to evaluate jobs for potential health hazards.

<http://www.laborcommission.utah.gov/UOSH/Outreach/ConstructionCD/www.osha.gov/SLTC/smallbusiness/sec5.html>

Question No: 33 (Marks: 1) - Please choose one

Which one of the following is used to produce gasoline and petroleum products?

- ▶ Job shop
- ▶ Batch processing
- ▶ Assembly line
- ▶ **Continuous processing**

Ref: http://highered.mcgraw-hill.com/sites/0073403296/student_view0/chapter7/multiple_choice_quiz.html

(See the Question No. 02)

Question No: 34 (Marks: 1) - Please choose one

The type of processing structure that is used for producing discrete products at higher volume is:

- ▶ Continuous Flow
- ▶ **Assembly Line**
- ▶ Batch
- ▶ Job shop

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html

(See the Question No. 3)

Question No: 35 (Marks: 1) - Please choose one

An example of a business/industry that uses batch flow process structure is:

- ▶ Commercial printer
- ▶ **Heavy equipment**
- ▶ Automobile assembly
- ▶ Sugar refinery

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html

(See the Question No. 04)

Question No: 36 (Marks: 1) - Please choose one

Services differ from manufacturing in all the following ways EXCEPT:

- ▶ Customers typically interact directly with the service delivery process.
- ▶ Consumption and production take place simultaneously.
- ▶ Services are intangible.
- ▶ **Services can be stored**

Ref: service operations are different from manufacturing operations in terms of

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- Tangible and intangible output
- customer consumption
- use of labor and equipment
- customer contact
- customer participation in conversion process
- measuring activities and resources

http://wiki.answers.com/Q/How_do_service_operations_differ_from_manufacturing_operations

Question No: 37 (Marks: 1) - Please choose one

Quality, costs, lead times, operating resources are all related to which one of the following strategies.

- ▶ Organizational strategy
- ▶ Financial strategy
- ▶ **Operational strategy**
- ▶ Tactical strategy

Ref: OPERATIONS STRATEGY: (Deals with the operations aspect of an organization).

OS is related to products, processes, methods, operating resources, quality, costs, lead times, and scheduling.

http://docs.google.com/viewer?a=v&q=cache:Z8OTKodTI24J:bulatov.org.ua/teaching_courses/nam_operations/L2%2520PRODUCTIVITY,%2520COMPETITIVENESS,%2520STRATEGY.doc+Quality,+costs,+lead+times,+operating+resources+are+all+related+to+Operational+strategy&hl=en&pid=bl&srcid=ADGEESjFppdZdPqJCYGeE5eZ0lbXSbBIaQuAZHRq8WGSAb060LQFyePsZ7uLK3tBxikelBwidDvqI2uehI7dlnTODYpZMU2xVYk6oWk7IHpLh4hW3Brot6pOUAe-f0XbM42tJV6kLRzg&sig=AHIEtbTIW5C5SYPMtZqjIHd9wX_vuoJE6g

Question No: 38 (Marks: 1) - Please choose one

All of the following are examples of the transformation process EXCEPT:

- ▶ Cutting
- ▶ Packing
- ▶ **Facilitating**
- ▶ Labeling

Ref: Examples of Transforming process and input in Food Processor:

<u>Inputs</u>	<u>Process</u>
Raw vegetables	cleaning
Metal sheets	Making cans
Water	Making cans
Energy	Cutting
Labor	Cooking
Building	Packing
Equipment	Labeling

http://docs.google.com/viewer?a=v&q=cache:27Zjwa-o6_kJ:highered.mcgraw-

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hill.com/sites/dl/free/0070951675/436573/samplech01.pdf+examples+of+the+transforma
tion+process+are+Cutting+%E2%96%BA+Packing+%E2%96%BA+Facilitating+%E2%
96%BA+Labeling&hl=en&pid=bl&srcid=ADGEESi98aGPPXv5w0w-VBGRprednU-
ENzzYtfDBdUfcf5sT5vBu0th2m1l74tG1Qt4oZOb-Fa69OEDb-
QWocDFhQvspN6W9p8LqyxNvDaLoKOWUVy-
rmCYeoSCBOUclepGwcQPLn7s&sig=AHIEtbQ8kba9NbTRC4loArQHIWN-H50AoQ

Question No: 39 (Marks: 1) - Please choose one
_____ purpose is to coordinate and control all the required sources so that
productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control
- ▶ **Demand management**
- ▶ Forecasting
- ▶ Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvgP9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=true

Question No: 40 (Marks: 1) - Please choose one
Which of the following is a characteristic of linear regression?

- ▶ It is superior to a moving average
- ▶ **It is a causal forecasting model**
- ▶ It compensates for both trend and seasonal variations in demand
- ▶ It is superior to an exponential smoothing

Ref: Linear regression is used both for time series forecasting and for casual relationship forecasting. When the dependent variable (usually the vertical axis on the graph) changes as a result of time (plotted on the horizontal axis), it is time series analysis. When the dependent variable changes because of the change in another variable, this is a casual relationship (such as the demand of cold drinks increasing with the temperature).

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+linear+regression+compensates+for+both+trend+and+seasonal+variations+in+demand&hl=en&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMllzbF5wpI0nxIgJ8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEtbQweGQ9quetmEqfenwFdiUUE2eZeg

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Paper No. 15

MIDTERM EXAMINATION Spring 2009

MGT613- Production / Operations Management (Session - 1)
Solved By Honey G <abdulhaice2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

A business process is a logical set of tasks or activities that:

- ▶ Are specific to the operations function
- ▶ Are specific to the marketing function
- ▶ **Are interdependent with other processes**
- ▶ Have exactly the same performance measures for any process

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter5/multiple_choice_quiz.html (See the Question No. 05)

Question No: 2 (Marks: 1) - Please choose one

Which of the following is referred to as plans for achieving goals?

- ▶ Rules
- ▶ **Strategies**
- ▶ Policies
- ▶ Mission

Ref: Strategies are Plans for achieving organizational goals (Handouts Page No. 12)

Question No: 3 (Marks: 1) - Please choose one

To make operations strategy effective it should be:

- ▶ Independent of the organization's strategy
- ▶ **Consistent with the organization's strategy**
- ▶ Developed by a first line manager
- ▶ Independent of time dimension

Ref: Operations strategy – The approach, consistent with organization strategy that is used to guide the operations function. We first study strategy design process with example for manufacturing and Services. (Handouts Page No. 14)

Question No: 4 (Marks: 1) - Please choose one

Which one of the following techniques uses historical data to predict future value of a variable of interest?

- ▶ **Time series method**

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- ▶ Causal forecasting method
- ▶ Qualitative forecasting method
- ▶ Intuitive forecasting method

Ref: Time series - uses historical data assuming the future will be like the past and depend on developing relationships between variables that can be expressed to predict future values. (Handouts page no. 35)

Question No: 5 (Marks: 1) - Please choose one

Which one of the following forecasting techniques uses explanatory variables to predict future demand?

- ▶ **Associative forecast**
- ▶ Time series forecast
- ▶ Consumer survey
- ▶ Executive opinion

Ref: Associative Models: forecasting technique that uses explanatory variables to predict future demand. <http://cramberry.net/sets/26728-operational-management-3>

Question No: 6 (Marks: 1) - Please choose one

Which one of the following involves completing a series of questionnaires each developed from the previous one, to achieve a consensus forecast?

- ▶ Consumer surveys
- ▶ Executive opinion
- ▶ Time series forecast
- ▶ **Delphi method**

Ref: Delphi method: Managers and staff complete a series of questionnaires, each developed from the previous one, to achieve a consensus forecast. (Handouts Page No35)

Question No: 7 (Marks: 1) - Please choose one

In which one of the following situations, the use of a decision tree is required instead of a payoff table?

- ▶ When there are more than three states of nature
- ▶ When there are more than three decision payoffs
- ▶ When the decision situation encompasses an extended time period
- ▶ **When a series of decisions is required**

Ref: However, a payoff table is usually limited to a single decision situation, as in our real estate investment example. If a decision situation requires a series of decisions, then a payoff table cannot be created, and a decision tree becomes the best method for decision analysis. <http://flylib.com/books/en/3.287.1.160/1/>

Question No: 08 (Marks: 1) - Please choose one

Given the table:

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Possible	Alternatives future demand	
	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000
Large facility	18,000	15,000

Which one of the following is the correct payoff under LAPLACE approach?

- ▶ Rs. 9,000
- ▶ Rs. 16,000
- ▶ Rs. 33,000
- ▶ **Rs. 16,500**

Ref: Take average for each alternative and choose the alternative with best average.

Small facility = $10000+8000=18000/2=9000$

Medium facility = $12000+20000=32000/2=16000$

Large facility = $18000+15000=33000/2=16500$

Question No: 9 (Marks: 1) - Please choose one

Which one of the following is called as the difference between designed and utilized capacity?

- ▶ Design capacity
- ▶ Effective capacity
- ▶ **Buffer capacity**
- ▶ Utilization rate

Ref: Capacity cushion or buffer is the difference between designed and utilized capacity.

<http://www.docstoc.com/docs/54960443/Lecture-16ppt> (See the Slide No. 05)

Question No: 10 (Marks: 1) - Please choose one

Which one of the following mathematical expressions is used to compute utilization?

- ▶ Actual output / effective capacity
- ▶ **Actual output / design capacity**
- ▶ Actual output + effective capacity
- ▶ Actual output – design capacity

Ref: For example:

Actual Output = 36 units / day

Design Capacity = 50 units / day

Utilization = $36/50 * 100 = 72\%$ (Handouts Page No. 66)

Question No: 11 (Marks: 1) - Please choose one

Which one of the following is the first step in line balancing?

- ▶ **Specify the sequential relationship among tasks**
- ▶ Determine the required cycle time.
- ▶ Determine the minimum number of workstations.

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- Determine the desired output

Ref: http://www.slidefinder.net/c/chapter_manufacturing_processes/25822455

(See the Slide No. 13)

Question No: 12 (Marks: 1) - Please choose one

What would be the required cycle time for a process that operates 9 hours daily with a desired output of 300 units per day?

- 0.03 minutes
- **1.8 minutes**
- 2700 minutes
- 291 minutes

Ref: $CT = \text{Time Cycle} = \text{Operating Time} / \text{Desire Output}$

$CT = \text{Time Cycle} = 9 * 60 / 300 = \mathbf{1.8 \text{ minutes}}$

Question No: 13 (Marks: 1) - Please choose one

What would be the output capacity if an assembly line operates for 7 hours per day with a cycle time of 2.0 minutes?

- 210 units per day
- **3.5 units per day**
- 0.004 units per day
- 14 units per day

Ref: $\text{Output Capacity} = \text{Operating Time} / \text{Cycle Time}$

$\text{Output Capacity} = 7 / 2.0$

Output Capacity = 3.5 Units per day

Question No: 14 (Marks: 1) - Please choose one

Which of the following factors are considered in product and service design?

- Customer satisfaction, quality, and improvement costs
- Employee motivation, quality, and production costs
- Customer satisfaction, flexibility, and production costs
- **Customer satisfaction, quality, and production costs**

Ref: A good product/service design can ensure customer satisfaction, quality and production costs. **(Handouts Page No. 44)**

Question No: 15 (Marks: 1) - Please choose one

An automatic car wash is an example of which of the following?

- Customized service
- Batch processing
- Intermittent processing
- **Standardized service**

Ref: Standardized service implies that every customer or item processed receives essentially the same service. An automatic car wash is a good example.

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<http://highered.mcgraw-hill.com/sites/dl/free/0070911894/90584/2ndSampleCh4.pdf>

Question No: 16 (Marks: 1) - Please choose one

Which of the following is an advantage of standardization?

- ▶ Frozen designs
- ▶ Customized parts
- ▶ **Interchangeable parts**
- ▶ Reduced variety

Ref: Advantages of Standardization

- Interchangeable parts
- Orders can be filled from inventory
- Easier repair & replacement
- Lower design costs. http://docs.google.com/viewer?a=v&q=cache:-HcGpKkXXGsJ:mkuyzu.etu.edu.tr/Chp4.pdf+advantage+of+standardization%3F+%E2%96%BA+Frozen+designs+%E2%96%BA+Customized+parts+%E2%96%BA+Interchangeable+parts+%E2%96%BA+Reduced+variety&hl=en&gl=pk&pid=bl&srcid=ADGEEShgD0r40WYN7Ah8bToiQKVOUwMol8VFKVcS2vJeitl zsbJWm6fdzboUL8-C9RzapNADGHnArzelc8KscxcMNZXHbDSWJAFakyrzuLT3Ww2YhDSABe-_l4JurNU6Ji-LS_qqG5AQ&sig=AHIEtbQ1hSU2is9EsB7nuPrO6QYqRilzBQ

Question No: 17 (Marks: 1) - Please choose one

Which one of the following is the most significant disadvantage of standardization?

- ▶ Reduced design costs
- ▶ Interchangeable parts
- ▶ **Reduced variety**
- ▶ Customized parts

Ref: ALL ARE ADVANTAGES EXCEPT 3RD OPTION:

Advantages of Standardization

- Interchangeable parts
- Orders can be filled from inventory
- Easier repair & replacement
- Lower design costs. http://docs.google.com/viewer?a=v&q=cache:-HcGpKkXXGsJ:mkuyzu.etu.edu.tr/Chp4.pdf+advantage+of+standardization%3F+%E2%96%BA+Frozen+designs+%E2%96%BA+Customized+parts+%E2%96%BA+Interchangeable+parts+%E2%96%BA+Reduced+variety&hl=en&gl=pk&pid=bl&srcid=ADGEEShgD0r40WYN7Ah8bToiQKVOUwMol8VFKVcS2vJeitl zsbJWm6fdzboUL8-C9RzapNADGHnArzelc8KscxcMNZXHbDSWJAFakyrzuLT3Ww2YhDSABe-_l4JurNU6Ji-LS_qqG5AQ&sig=AHIEtbQ1hSU2is9EsB7nuPrO6QYqRilzBQ

Question No: 18 (Marks: 1) - Please choose one

Product life cycle is based on which of the following components?

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- ▶ Place
- ▶ **Demand**
- ▶ Supply
- ▶ Price

Ref: Life Cycle Strategies are based on Demand.

http://www.hammertap.com/nl_0050/

Question No: 19 (Marks: 1) - Please choose one

Which one of the following statements relates to the final stage of product life cycle?

- ▶ Improve reliability, and reduce production costs
- ▶ **Improve packaging and reliability**
- ▶ Improve reliability, and reduce quality
- ▶ Improve reliability, and reduce promotion costs

Ref: DECLINE: In this phase, most of the organizations adopt a defensive design R&D Strategy in an attempt to prolong the life of the product by employing new packaging, redesigning it, improving its reliability.

<http://www.websukat.com/TQM-product-life-cycle.htm>

Question No: 20 (Marks: 1) - Please choose one

Which of the following refers to translate the voice of the customer into technical design requirements?

- ▶ Concurrent design
- ▶ Design for manufacture
- ▶ Robust design
- ▶ **Quality functional deployment**

Ref: A popular managerial view is that the Quality Function should be deployed at the source or at the design stage. We also should know what Quality Function Deployment is. Two common answers being that it is the voice of the customer (which always sets a standard for the service organization to follow) and the second one being that it should be in the form of a house of quality **(Handouts Page No. 55)**

Question No: 21 (Marks: 1) - Please choose one

Which one of the following is correct about the range of availability on a measuring index?

- ▶ 0.1 to 1.0
- ▶ **0 to 1.0**
- ▶ 0.5 to 1.0
- ▶ 0.01 to 1.0

Ref:

http://books.google.com.pk/books?id=818wT_TGJgAC&pg=PA23&lpg=PA23&dq=index+range+from+0+to+1.0&source=bl&ots=swmbQfISvn&sig=Nj0_bfiYtEEwwonlQAMYUkWh0Bw&hl=en&ei=fU-4Tf7SLM-

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xhAeY6rSADw&sa=X&oi=book_result&ct=result&resnum=7&ved=0CD8Q6AEwBjgK#v=onepage&q=index%20range%20from%200%20to%201.0&f=false

Question No: 22 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 250 hours between repairs, and the mean repair time is expected to be 3 hours?

- ▶ 1.01
- ▶ 5.03
- ▶ 3.0
- ▶ **0.98**

Ref: Availability = (MTBF) / (MTBF + MTR)

Availability = 250 / (250+3)

Availability = 250 / 253 = **0.988**

Question No: 23 (Marks: 1) - Please choose one

Which one of the following refers to a team having representatives from different functional areas of the organization?

- ▶ Traditional work group
- ▶ Self-directed team
- ▶ **Cross-functional team**
- ▶ Self motivated team

Ref: While having representatives from different functions as team members is predicted to facilitate communication with non-team members from those functions, this structure may also create internal conflicts.

<http://docs.google.com/viewer?a=v&q=cache:CpKetaj5A98J:dspace.mit.edu/bitstream/handle/1721.1/2310/SWP-3179-22870423.pdf%3Fsequence%3D1+team+having+representatives+from+different+functional+areas+of+the+organization&hl=en&gl=pk&pid=bl&srcid=ADGEESiZz0JtbazwsFj3WOxuhpTDJ3LMgStdq5o3KAjjil6-ogLEsA07go0PRGGxnd9tFSN1EyQmfkxsF36ST6PakVPq8W0sFVgyN0kKutPRmM5vpEAOtjjM1eJkQDDCvaG0-o0P0BC5&sig=AHIEtbQPvW7bHUJDdOn5ZCFS7AOy6L3gTA>

Question No: 24 (Marks: 1) - Please choose one

Which one of the following refers to the length of time needed to complete a job?

- ▶ Work sampling methods
- ▶ **Work measurement**
- ▶ Job design
- ▶ Methods analysis

Ref: And last but not the least work measurements dealt specifically with the length of time needed to complete a job and was linked with Personnel Planning, Cost Estimation, Budgeting, Scheduling and Worker Compensation. (Handouts Page No. 93)

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Question No: 25 (Marks: 1) - Please choose one

Which of the following refers to bringing together engineering design and manufacturing personnel early in the design phase?

- ▶ Reverse engineering
- ▶ **Concurrent engineering**
- ▶ Manufacturability
- ▶ Serviceability

Ref: Concurrent engineering is the bringing together of engineering design and manufacturing personnel early in the design phase. (Handouts page no. 53)

Question No: 26 (Marks: 1) - Please choose one

Which of the following is the primary input in capacity planning?

- ▶ Supply chain capabilities
- ▶ Competitors' strengths
- ▶ **Demand forecasts**
- ▶ Overall cost estimates

Ref: Besides service level requirements, the other key input into the capacity planning process is a forecast or plan for the organization's future. Capacity planning is really just a process for determining the optimal way to satisfy business requirements such as forecasted increases in the amount of work to be done, while at the same time meeting service level requirements. <http://www.teamquest.com/pdfs/whitepaper/tqwp23.pdf>

Question No: 27 (Marks: 1) - Please choose one

Which of the following **best** describes the concept of the value chain?

- ▶ The step-wise increases in product prices as raw materials are turned into goods/services
- ▶ Adding financial value to an organization through the acquisition of other firms
- ▶ A sequence of activities that involve movement of materials in a production facility
- ▶ **All steps in the transformation process that add value even if they don't come from manufacturing**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html (See the Question No. 12)

Question No: 28 (Marks: 1) - Please choose one

The Strategies which are more focused on maintaining or improving the quality of an organization's products or services are known as:

- ▶ Quality at the source
- ▶ Time based strategies
- ▶ Cost leadership strategies
- ▶ **Quality-based strategies**

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Ref: Quality-based strategies

Focuses on maintaining or improving the quality of an organization's products or services
(Handouts Page No. 18)

Paper No. 16

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 1)

Solved By Honey G <abdulhaice2004@gmail.com>

Question No: 1 __ (Marks: 1) - Please choose one

Which ONE of the following statements correctly explains the role of operation's manager?

- ▶ To coordinate the activities between marketing and finance department
- ▶ To sustain, protect and project the company's long term strategies
- ▶ To develop organizational strategy that reflects the operational strategy
- ▶ **To sustain, protect and project the company's operation/production side**

Ref: Whether profit or non profit, the role of an OPERATIONS MANAGER is to sustain, protect, and project the company's operations side. **(Handouts Page No. 01)**

Question No: 2 __ (Marks: 1) - Please choose one

Which one of the following decision is NOT made by operations managers?

- ▶ How much capacity is required to balance demand?
- ▶ What should be the location and layout of a facility?
- ▶ How to improve operational efficiency?
- ▶ **Which market areas to manufacture the products for?**

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4471/1144826.cw/index.htm
(See the Question No. 08)

Question No: 3 __ (Marks: 1) - Please choose one

The major business function consisting of research and development, product design, manufacturing, marketing, distribution, and customer service is refers to:

- ▶ Value chain
- ▶ The transformation process
- ▶ Quality control
- ▶ **Life cycle**

Ref:

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<http://books.google.com.pk/books?id=f5p17Sz5NLMC&pg=PA379&lpg=PA379&dq=of+research+and+development#v=onepage&q=of%20research%20and%20development&f=false>

Question No: 4 (Marks: 1) - Please choose one

Which of the following is referred to as plans for achieving goals?

- ▶ Rules
- ▶ **Strategies**
- ▶ Policies
- ▶ Mission

Ref: Strategies are Plans for achieving organizational goals (**Handouts Page No. 12**)

Question No: 5 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

- ▶ A factor which may be significant in other parts of the organization
- ▶ **A factor which gives an organization a competitive edge**
- ▶ A factor which serves as a minimum standard for purchase
- ▶ A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to be perceived as better than the competitor's services. (**Handouts Page No. 15**)

Question No: 6 __ (Marks: 1) - Please choose one

Which of the following statements describes an order-qualifier characteristic?

- ▶ A competitive dimension used to make final decision among competitors
- ▶ A factor which directly and significantly contribute to winning business
- ▶ A factor which increases the profitability of the organization
- ▶ **A factor perceived as a minimum standard as a potential for purchase**

Ref: Order qualifiers are those significant characteristics that service customers perceive as minimum standards of acceptability to be considered as a potential purchase while order winners (**Handouts Page No. 15**)

Question No: 7 (Marks: 1) - Please choose one

As a manager, you have defined the purpose of the forecasts. What should be the **next** step in forecasting process?

- ▶ Choose a forecasting technique.
- ▶ Determine the purpose of the forecast.
- ▶ **Set up a time horizon or a time limit.**
- ▶ Collect and analyze the appropriate data.

Ref: Steps in the Forecasting Process:

- **Determine the purpose of the forecast:** meaning what is the purpose and when will it be required. This will provide the level of detail for resources required man, machine, time and capital.

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- **Establish a time horizon:** We already know that as time increases the accuracy of the Forecast decreases.
- **Select a forecasting technique:** whether qualitative or quantitative
- **Gather and analyze the appropriate data:** It goes without saying that before a forecast can be delivered data is required. The closer the real life data more realistic would be the forecast. This may be the time when you would like to identify the important assumptions and suppositions.
- **Prepare the forecast:**
- **Monitor the forecast:** A forecast has to be closely monitored to determine whether it is fulfilling its basic purpose. This helps in re-examining the method, assumptions and validity of the data and preparing a revised forecast.

Question No: 8 __ (Marks: 1) - Please choose one

Which one of the following techniques uses historical data to predict future value of a variable of interest?

- ▶ **Time series method**
- ▶ Causal forecasting method
- ▶ Qualitative forecasting method
- ▶ Intuitive forecasting method

Ref: Time series - uses historical data assuming the future will be like the past and depend on developing relationships between variables that can be expressed to predict future values. (Handouts page no. 35)

Question No: 9 __ (Marks: 1) - Please choose one

Which one of the following forecasting techniques use subjective inputs such as opinions from consumer surveys, sales staff, managers and experts?

Time series

Quantitative

Judgmental

Associative

Ref: Judgmental - uses subjective inputs meaning that a judgmental forecast rely on analysis of subjective inputs obtained from various sources, such as consumer surveys, the sales staff, managers and executives, and panels of experts. These insights are not available publicly. (Handouts Page No. 35)

Question No: 10 __ (Marks: 1) - Please choose one

Which of the following approaches favors adopting a “go for it” strategy?

- ▶ Maximin
- ▶ **Maximax**
- ▶ Minimax regret
- ▶ Laplace

Ref: Maximax:

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- Maximax determines
- the best possible outcome
- Choose the Alternative with the best possible payoff.
- It does not take into account any other alternative then the best payoff.
- An optimistic approach.
- Go for it strategy. **(Handouts Page No. 26)**

Question No: 11 (Marks: 1) - Please choose one

In which one of the following situations, the use of a decision tree is required instead of a payoff table?

- ▶ When there are more than three states of nature
- ▶ When there are more than three decision payoffs
- ▶ When the decision situation encompasses an extended time period
- ▶ **When a series of decisions is required**

Ref: However, a payoff table is usually limited to a single decision situation, as in our real estate investment example. If a decision situation requires a series of decisions, then a payoff table cannot be created, and a decision tree becomes the best method for decision analysis. <http://flylib.com/books/en/3.287.1.160/1/>

Question No: 12 (Marks: 1) - Please choose one

Which one of the following is a limitation of a moving average having a trend?

- ▶ **The forecast lags behind the actual**
- ▶ The forecast represents demand more accurately
- ▶ The forecast will not be accurate
- ▶ The forecast will not be reliable

Ref: If, over several periods, a time series shows a change in the average value which corresponds to the trend model, the forecast values always lag behind the actual values by one or several periods in the first-order exponential smoothing procedure. http://help.sap.com/saphelp_45b/helpdata/en/a5/6320e843a211d189410000e829fbbd/content.htm

Question No: 13 (Marks: 1) - Please choose one

Which one of the following reasons account for using moving average in forecasting?

- ▶ It eliminates the trend
- ▶ **It smoothes the random fluctuations**
- ▶ It counteracts the seasonal variations
- ▶ It approximates the period average

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter9/multiple_choice_quiz.html

(See the Question No. 06)

Question No: 14 (Marks: 1) - Please choose one

Which one of the following refers to the maximum output that a firm can produce under

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ideal conditions?

► **Design capacity**

- Effective capacity
- Capacity planning
- Utilization rate

Ref: Design capacity is the maximum output rate or service capacity an operation, process, or facility. **(Handouts Page No. 66)**

Question No: 15 __ (Marks: 1) - Please choose one

Which one of the following mathematical expressions is used to compute utilization?

- Actual output / effective capacity
- **Actual output / design capacity**
- Actual output + effective capacity
- Actual output – design capacity

Ref: For example:

Actual Output = 36 units / day

Design Capacity = 50 units / day

Utilization = $36/50 * 100 = 72\%$ **(Handouts Page No. 66)**

Question No: 16 (Marks: 1) - Please choose one

What would be the utilization, if 40 cars are produced in a day with a design capacity of 60 cars per day?

- **67%**
- 20%
- 100%
- 150%

Ref: Utilization = Actual output / design capacity

Utilization = $40/60 * 100 = 67\%$

Question No: 17 (Marks: 1) - Please choose one

Which of the following statements is correct about capacity evaluating alternatives?

- **Minimum cost and optimal operating rate are functions of size of plant.**
- Minimum cost and optimal operating rate are functions of fixed cost.
- Minimum cost and productivity are functions of size of plant.
- Maximum cost and optimal operating rate are functions of size of plant.

Ref: Evaluating Alternatives

- As the general capacity of the plant increases, the optimal output rate increases and the minimum cost for the optimal rate decreases.
- This is the prime reason why larger plants tend to have higher optimal output rates and lower minimum costs than smaller plants. **(Handouts page No. 69)**

Question No: 18 (Marks: 1) - Please choose one

Which one of the following is the first step in line balancing?

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► **Specify the sequential relationship among tasks**

- Determine the required cycle time.
- Determine the minimum number of workstations.
- Determine the desired output

Ref: http://www.slidefinder.net/c/chapter_manufacturing_processes/25822455

(See the Slide No. 13)

Question No: 19 (Marks: 1) - Please choose one

The formula for determining the required cycle time is operation time per day divided by:

- Sum of task times
- Actual output per day (in units)
- Number of workstations

► **Desired output (in units)**

Ref: Cycle time is the maximum time allowed at each workstation to complete its set of tasks on a unit. If CT represents cycle time and D represents the desired output then we can calculate cycle time as **(Handouts Page No. 85)**

Question No: 20 __ (Marks: 1) - Please choose one

Which one of the following statements is NOT correct about cycle time?

- It represents daily operating time divided by desired production
- It is the maximum allowable time at each work station
- It determines the time often items take to roll off in assembly line

► **It is the time required to complete a product from start to finish**

Ref: The cycle time is **not** the time required to complete a product from start to finish. This value would be the cycle time multiplied by the number of workstations.

<http://www.cbpa.ewu.edu/~pnemetzmills/OMch5/pracanswers.html> (See the Question No. 02)

Question No: 21 __ (Marks: 1) - Please choose one

What would be the required cycle time for a process that operates 9 hours daily with a desired output of 300 units per day?

- 0.03 minutes
- **1.8 minutes**
- 2700 minutes
- 291 minutes

Ref: $CT = \text{Time Cycle} = \text{Operating Time} / \text{Desire Output}$

$CT = \text{Time Cycle} = 9 * 60 / 300 = \mathbf{1.8 \text{ minutes}}$

Question No: 22 __ (Marks: 1) - Please choose one

What would be the output capacity if an assembly line operates for 7 hours per day with a cycle time of 2.0 minutes?

- 210 units per day
- **3.5 units per day**

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- ▶ 0.004 units per day
- ▶ 14 units per day

Ref: Output Capacity = Operating Time / Cycle Time
Output Capacity = 7 / 2.0
Output Capacity = 3.5 Units per day

Question No: 23 __ (Marks: 1) - Please choose one

Which one of the following types of manufacturing layout is considered a hybrid?

- ▶ Process layout
- ▶ Product layout
- ▶ Fixed-position layout
- ▶ **All of the given options**

Ref: Hybrid/Combination: A Layout that makes use of the combination of Product, Process or Fixed Position Layout. **(Handouts Page No. 80)**

Question No: 24 __ (Marks: 1) - Please choose one

A department store discovered that in a four-month period, the best forecast can be determined by using 50 percent of the sales for the most recent month, 20 percent of the sales of two months ago, 10 percent of the sales of three months ago, and 20 percent of the sales of four months ago. Which forecasting method should the store use to forecast demand?

- ▶ Simple Moving Average
- ▶ Linear Regression
- ▶ Time Series Analysis
- ▶ **Weighted Moving Average**

Ref: Weighted Moving Average

Whereas the simple moving average gives equal weight to each component of the moving average database, a weighted moving average allows any weights to be placed on each element, providing, of course, that the sum of all weights equals 1. **For example**, a department store may find that in a four-month period, the best forecast is derived by using 40 percent of the actual sales for the most recent month, 30 percent of two months ago, 20 percent of three months ago, and 10 percent of four months ago.

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+A+department+store+discovered+that+in+a+four-month+period,+the+best+forecast+can+be+determined+by+using+50+percent+of+the+sales+for+the+most+recent+month,+20+percent+of+the+sales+of+two+months+ago,+10+percent+of+the+sales+of+three+months+ago,+and+20+percent+of+the+sales+of+four+months+ago.+Which+forecasting+method+should+the+store+use+to+forecast+demand+%3F+%E2%96%BA+Simple+Moving+Average+%E2%96%BA+Linear+Regression+%E2%96%BA+Time+Series+Analysis+%E2%96%BA+Weighted+Moving+Average&hl=en&gl=pk&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMlzbF5wpI0nxIgj8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-

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BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEt
bR6QAx5fG8CQkeTPpk7SBvpbuEl1A

Question No: 25 __ (Marks: 1) - Please choose one

Which of the following forecasting technique is based on the assumption that past data is more indicative of the future than the most recent occurrences?

▶ **Exponential smoothing**

- ▶ Linear regression
- ▶ Judgmental forecast
- ▶ Naive forecast

Ref: In many applications (perhaps in most), the most recent occurrences are more indicative of the future than those in the more distant past. If this premise is valid – “that the importance of data diminishes as the past becomes more distant” - then exponential smoothing may be the most logical and easiest method to use.

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+Exponential+smoothing+is+based+on+the+assumption+that+past+data+is+more+indicative+of+the+future+than+the+most+recent+occurrences&hl=en&gl=pk&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMlzbF5wpI0nxIgJ8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEtbTwalQd7sTFtecd46RVg72u_ZLEEg

Question No: 26 (Marks: 1) - Please choose one

Which of the following takes into consideration the design of aesthetics of the product?

- ▶ Functional design
- ▶ Production design
- ▶ Service design

▶ **Product design**

Ref: Product design (i.e., industrial design) is perhaps most associated with aesthetic considerations <http://www.acrwebsite.org/volumes/display.asp?id=7824>

Question No: 27 (Marks: 1) - Please choose one

Which of the following is an advantage of standardization?

- ▶ Frozen designs
- ▶ Customized parts

▶ **Interchangeable parts**

- ▶ Reduced variety

Ref: Advantages of Standardization

- Interchangeable parts
- Orders can be filled from inventory
- Easier repair & replacement

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- Lower design costs. http://docs.google.com/viewer?a=v&q=cache:-HcGpKkXXGsJ:mkuyzu.etu.edu.tr/Chp4.pdf+advantage+of+standardization%3F+%E2%96%BA+Frozen+designs+%E2%96%BA+Customized+parts+%E2%96%BA+Interchangeable+parts+%E2%96%BA+Reduced+variety&hl=en&gl=pk&pid=bl&srcid=ADGEEShgD0r40WYN7Ah8bToiQKVOUwMol8VFKVcS2vJeitl-zsbJWm6fdzboUL8-C9RzapNADGHnArzelc8KscxcMNZXHbDSWJAFakyrzuLT3Ww2YhDSABe-l4JurNU6Ji-LS_qqG5AQ&sig=AHIEtbQ1hSU2is9EsB7nuPrO6QYqRilzBQ

Question No: 28 (Marks: 1) - Please choose one

Which one of the following is the most significant disadvantage of standardization?

- ▶ Reduced design costs
- ▶ Interchangeable parts
- ▶ **Reduced variety**
- ▶ Customized parts

Ref: ALL ARE ADVANTAGES EXCEPT 3RD OPTION:

Advantages of Standardization

- Interchangeable parts
- Orders can be filled from inventory
- Easier repair & replacement
- Lower design costs. http://docs.google.com/viewer?a=v&q=cache:-HcGpKkXXGsJ:mkuyzu.etu.edu.tr/Chp4.pdf+advantage+of+standardization%3F+%E2%96%BA+Frozen+designs+%E2%96%BA+Customized+parts+%E2%96%BA+Interchangeable+parts+%E2%96%BA+Reduced+variety&hl=en&gl=pk&pid=bl&srcid=ADGEEShgD0r40WYN7Ah8bToiQKVOUwMol8VFKVcS2vJeitl-zsbJWm6fdzboUL8-C9RzapNADGHnArzelc8KscxcMNZXHbDSWJAFakyrzuLT3Ww2YhDSABe-l4JurNU6Ji-LS_qqG5AQ&sig=AHIEtbQ1hSU2is9EsB7nuPrO6QYqRilzBQ

Question No: 29 (Marks: 1) - Please choose one

Which one of the following is TRUE about Taguchi Approach?

- ▶ **To test the robustness of a design**
- ▶ To articulate the “voice of the customer”
- ▶ To reduce the degree of automation
- ▶ To create a concurrent design

Ref: The defining characteristics for the Taguchi approach include:

- Design a robust product
- Insensitive to environmental factors either in manufacturing or in use.
- Central feature is Parameter Design. **(Handouts Page No. 52)**

Question No: 30 (Marks: 1) - Please choose one

Which one of the following is correct about the range of availability on a measuring index?

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- ▶ 0.1 to 1.0
- ▶ **0 to 1.0**
- ▶ 0.5 to 1.0
- ▶ 0.01 to 1.0

Ref:

http://books.google.com.pk/books?id=818wT_TGJgAC&pg=PA23&lpg=PA23&dq=index+range+from+0+to+1.0&source=bl&ots=swmbQfISvn&sig=Nj0_bfiYtEEwwonlQAMYUkWh0Bw&hl=en&ei=fU-4Tf7SLM-xhAeY6rSADw&sa=X&oi=book_result&ct=result&resnum=7&ved=0CD8Q6AEwBjgK#v=onepage&q=index%20range%20from%200%20to%201.0&f=false

Question No: 31 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 350 hours between repairs, and the mean repair time is expected to be 3 hours?

- ▶ **0.99**
- ▶ 1.0
- ▶ 3.0
- ▶ 7.03

Ref: Availability = (MTBF) / (MTBF + MTR)

Availability = (350) / (350+3)

Availability = 350 / 353

Availability = 0.99

Question No: 32 (Marks: 1) - Please choose one

Which of the following management level is responsible for long-range capacity planning?

- ▶ Lower management
- ▶ Middle management
- ▶ **Top management**
- ▶ Non managerial employees

Question No: 33 (Marks: 1) - Please choose one

Which one of the following refers to a team having representatives from different functional areas of the organization?

- ▶ Traditional work group
- ▶ Self-directed team
- ▶ **Cross-functional team**
- ▶ Self motivated team

Ref: While having representatives from different functions as team members is predicted to facilitate communication with non-team members from those functions, this structure may also create internal conflicts.

<http://docs.google.com/viewer?a=v&q=cache:CpKetaj5A98J:dspace.mit.edu/bitstream/handle/1721.1/2310/SWP-3179->

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22870423.pdf%3Fsequence%3D1+team+having+representatives+from+different+functional+areas+of+the+organization&hl=en&gl=pk&pid=bl&srcid=ADGEESiZz0JtbazwsFj3WOxuhpTDJ3LMgStdq5o3KAjjil6-ogLEsA07go0PRGGxnd9tFSN1EyQmfkxsF36ST6PakVPq8W0sFVgyN0kKutPRmM5vpEAOtjM1eJkQDDCvaG0-o0P0BC5&sig=AHIEtbQPVw7bHUJDdOn5ZCFS7AOy6L3gTA

Question No: 34 (Marks: 1) - Please choose one

Which of the following refers to changing the job role of one worker with another?

- ▶ **Job rotation**
- ▶ Job enlargement
- ▶ Job enrichment
- ▶ Job design

Ref: Job rotation is the systematic movement of employees from job to job within an organization, as a way to achieve many different human resources objectives : for simply staffing jobs, for orienting new employees, for preventing job boredom, and, finally, for training employees and enhancing their career development.

http://www.explorehr.org/articles/Career_Management/Career_Development_Program.html

Question No: 35 (Marks: 1) - Please choose one

Which one of the following is NOT a business application of forecasting?

- ▶ Budgeting
- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Quality control**

Ref: Forecasting in business forms the basis for budgeting and planning for capacity, sales, production, inventory, manpower, purchasing and more. **(Handouts Page No. 31)**

Question No: 36 (Marks: 1) - Please choose one

Which one of the following is an example of site related factors that affect location decision?

- ▶ **Transportation**
- ▶ Quality of life
- ▶ Location of new markets
- ▶ Location of raw materials

Ref: Site Related Factors

- Land
- Transportation
- Environmental
- Legal **(Handouts Page No. 96)**

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Question No: 37 __ (Marks: 1) - Please choose one

In which of the following approaches location decision is based on personal opinions and quantitative information?

► **Factor rating**

- Market area plant strategy
- Currency fluctuations
- Product plant strategy

Ref: Factor rating enables decision makers to incorporate their personal opinions and quantitative information in the decision process.

http://docs.google.com/viewer?a=v&q=cache:hle5jRN1yUJ:farfromneutral.com/kaizen/wp-content/uploads/web_location_planning.pdf+Factor+rating+enables+decision+makers+to+incorporate+their+personal+opinions+and+quantitative+information&hl=en&pid=bl&rcid=ADGEESh4_F-ZX_uWV4qLQb5LaqEt_hOyLPwunPeMA0DqFcHqiMAkZG5tmP74ZKXG2hqBvICBP_L8NehlKvFrgCCM5CtE1-Q1Y8WVDtcLK_Zr8sWybaKr67vdl4ZTIj5rdMy4CyfGqEiYl&sig=AHIEtbR8oCpDNOFTQM0UVhdYpjpgMo34SgQ

Question No: 38 __ (Marks: 1) - Please choose one

Which of the following **best** describes the concept of the value chain?

- The step-wise increases in product prices as raw materials are turned into goods/services
- Adding financial value to an organization through the acquisition of other firms
- A sequence of activities that involve movement of materials in a production facility
- **All steps in the transformation process that add value even if they don't come from manufacturing**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter1/multiple_choice_quiz.html

(See the Question No. 12)

Question No: 39 __ (Marks: 1) - Please choose one

The strategies which are more focused on maintaining or improving the quality of an organization's products or services are known as:

- Quality at the source
- Time based strategies
- Cost leadership strategies
- **Quality-based strategies**

Ref: Quality-based strategies

Focuses on maintaining or improving the quality of an organization's products or services (Handouts Page No. 18)

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Question No: 40 __ (Marks: 1) - Please choose one

Which one of the following describes the Naïve forecast?

- ▶ Attempt to predict the future value based on the past data.
- ▶ Determine long term upward or downward movement in data.
- ▶ **Forecast for any period equals the previous period's actual value.**
- ▶ Collect outside opinion of consumer and potential customers.

Ref: http://books.google.com.pk/books?id=8JM6wU_sBc0C&pg=PA145&lpg=PA145&dq=Na%C3%AFve+forecast+Forecast+for+any+period+equals+the+previous+period%E2%80%99s+actual+value&source=bl&ots=pZp4q8Kc8Q&sig=eBPVKOqJfUTmo-9Z-qAZtCRtY1I&hl=en&ei=IEW0Tb_yIciY8QPSyISWDA&sa=X&oi=book_result&ct=result&resnum=4&ved=0CCIQ6AEwAw#v=onepage&q&f=false

Paper No. 17

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 2)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

The major business function consisting of research and development, product design, manufacturing, marketing, distribution, and customer service is refers to:

- ▶ Value chain
- ▶ The transformation process
- ▶ Quality control
- ▶ **Life cycle**

Ref: <http://books.google.com.pk/books?id=f5p17Sz5NLMC&pg=PA379&lpg=PA379&dq=of+research+and+development#v=onepage&q=of%20research%20and%20development&f=false>

Question No: 2 (Marks: 1) - Please choose one

Which of the following is NOT usually considered a general characteristic of a service?

- ▶ Production and sales cannot easily be separated functionally
- ▶ Many services involve both tangible and intangible outputs
- ▶ **Production and consumption can always be separated**
- ▶ Degree of customer contact is high

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Ref.: Since services are intangible, they cannot be stored. The production and consumption of a service usually occur at the same time.

http://docs.google.com/viewer?a=v&q=cache:L4jyS-JP7UsJ:highered.mcgraw-hill.com/sites/dl/free/0073403318/823112/Sample_Chap_01.pdf+Which+of+the+following+is+NOT+usually+considered+a+general+characteristic+of+a+service%E2%96%BA+Production+and+sales+cannot+easily+be+separated+functionally+%E2%96%BA+Many+services+involve+both+tangible+and+intangible+outputs+%E2%96%BA+Production+and+consumption+can+always+be+separated+%E2%96%BA+Degree+of+customer+contact+is+high&hl=en&gl=pk&pid=bl&srcid=ADGEEShuWM-Q96C6O4K2DaS9KmGK-rPQprFwAtcLde-7pLcrju7ARaKaP-W0cfES19wotDRnGLRXY2mt2-ESMdhRisXsgqIHrkAVBjXKgzKtFi9C8cxTZbCpNt1A4s-LEGwm619tSfgJ&sig=AHIEtbSbq2OWcRtK1dw4gNnlnLQJb-T-Kw

Question No: 3 (Marks: 1) - Please choose one

Which one of the following is an implication of LAPLACE approach of decision making?

- ▶ The best of the worst possible payoff
- ▶ The best possible payoff
- ▶ **The best average payoff**
- ▶ The least of the worst regrets

Ref: Laplace, the best payoff of the average for each alternative. (Handouts Page No. 27)

Question No: 4 (Marks: 1) - Please choose one

Which one of the following is an outcome of Maximin criterion?

- ▶ **The best of the worst possible payoff**
- ▶ The best possible payoff
- ▶ The best average payoff
- ▶ The least of the worst regrets

Ref: Maximin determines the worst payoff for each alternative; the operations manager chooses the best worst alternative. Meaning the least (best) of the worst. (Handouts Page No. 26)

Question No: 5 (Marks: 1) - Please choose one

Given the table:

Possible future demand	
Low (Rs.)	High (Rs.)
10,000	8,000
12,000	20,000
18,000	15,000

Which one of the following is the correct payoff under MAXIMIN approach?

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▶ **Rs. 8,000**

▶ Rs. 12,000

▶ Rs. 18,000

▶ Rs. 20,000

Ref: Highest minus minimum

$\text{MAXMIN} = 20000 - 12000 = 8000$

Question No: 6 (Marks: 1) - Please choose one

Which one of the following forecasting techniques is used to identify a trend when data is neither growing nor declining rapidly and has no seasonal characteristics?

▶ **Simple moving average**

▶ Delphi method

▶ Trend adjusted forecast

▶ Naïve forecast

Ref: The Moving Average model takes the average of several periods of data; the result is a dampened or smoothed data set; use this model when demand is stable and there is no evidence of a trend or seasonal pattern. <http://www.shmula.com/forecasting-unweighted-and-weighted-moving-average-model/308/>

Question No: 7 (Marks: 1) - Please choose one

Which one of the following refers to the maximum output that a firm can produce under ideal conditions?

▶ **Design capacity**

▶ Effective capacity

▶ Capacity planning

▶ Utilization rate

Ref: Design capacity is the maximum output rate or service capacity an operation, process, or facility. (Handouts Page No. 66)

Question No: 8 (Marks: 1) - Please choose one

Which one of the following perspectives is the most obvious to be considered while evaluating alternatives for future capacity?

▶ Social

▶ Political

▶ **Economic**

▶ Legal

Ref:

http://books.google.com.pk/books?id=tqVIT0xE4NAC&pg=PA192&dq=Economic+perspectives+evaluating+alternatives+for+future+capacity&hl=en&ei=1o13TfntIoKCOsY1McB&sa=X&oi=book_result&ct=result&resnum=1&ved=0CCcQ6AEwAA#v=onepage&q=Economic%20perspectives%20evaluating%20alternatives%20for%20future%20capacity&f=false

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Question No: 9 (Marks: 1) - Please choose one

Which of the following terms of financial analysis are important for the organization to proceed with a capacity alternative decision?

- ▶ Cash flow and fixed cost
- ▶ Present value and fixed cost
- ▶ **Cash flow and present value**
- ▶ Cash flow and profit

Ref: Operations manager along with managerial accountant often work to calculate what cash flow or present value in terms of rupees is available for the organization to proceed with a capacity alternative decision. **(Handouts Page No. 76)**

Question No: 10 (Marks: 1) - Please choose one

Which one of the following manufacturing process is associated with high volume car manufacture?

- ▶ Job shop
- ▶ **Assembly line**
- ▶ Batch
- ▶ Automation

Ref: Before discussing JIT look at in-line assembly systems (traditionally used in **high volume car manufacture**)

http://webcache.googleusercontent.com/search?q=cache:rJ2HjqtUCIQJ:www.ocr.org.uk/download/sm/ocr_13258_sm_gce_unit_f524.doc+%22manufacturing+process%22+for+%22high+volume+car+manufacture?%22&hl=en

Question No: 11 (Marks: 1) - Please choose one

The formula for determining the required cycle time is operation time per day divided by:

- ▶ Sum of task times
- ▶ Actual output per day (in units)
- ▶ Number of workstations
- ▶ **Desired output (in units)**

Ref: Cycle time is the maximum time allowed at each workstation to complete its set of tasks on a unit. If CT represents cycle time and D represents the desired output then we can calculate cycle time as **(Handouts Page No. 85)**

Question No: 12 (Marks: 1) - Please choose one

Assembly lines relate most closely to a:

- ▶ Functional layout
- ▶ **Product layout**
- ▶ Process layout
- ▶ Departmental layout

Ref: Assembly lines are a special case of product layout. In a general sense, the term assembly line refers to progressive assembly linked by some material handling device.

Note: Solve these papers by yourself

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http://docs.google.com/viewer?a=v&q=cache:3jUTDWx2e4IJ:www.ateneonline.it/chase2e/studenti/tn/6184-7_tn05.pdf+Assembly+lines+relate+most+closely+to+a:+%E2%96%BA+Functional+layout+%E2%96%BA+Product+layout+%E2%96%BA+Process+layout+%E2%96%BA+Departmental+layout&hl=en&gl=pk&pid=bl&srcid=ADGEESh8r19njYE70vMpgQzCTpHYGtIHlnmve9br89oTuU_polHaRdI1wM9dTpef325TYLnQrGfqLZQN7v1tHTYHdzlBcO_H-HqJsTShQcxtKw8_4hfncmLzFGuSbmRyBtQgm3VrYB2&sig=AHIEtbRFRHNLG1Fl6jhNlX6n128_iEgUMg

Question No: 13 (Marks: 1) - Please choose one

Which one of the following layout type is associated with a restaurant?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ Product layout
- ▶ **Hybrid layout**

Ref: http://books.google.com.pk/books?id=sWtOeC-3pEC&pg=PA111&lpg=PA111&dq=Hybrid+layout++is+associated+with+a+restaurant&source=bl&ots=sL8qmiQ-be&sig=nzSNWZT-NbCFBtjrw0k73nnMMGc&hl=en&ei=UHe4Tdu5GoLJhAenzpGXDw&sa=X&oi=book_result&ct=result&resnum=4&ved=0CCkQ6AEwAw#v=onepage&q&f=false

Question No: 14 (Marks: 1) - Please choose one

In exponential smoothing model, α denotes:

- ▶ **Smoothing constant**
- ▶ Actual forecast
- ▶ Forecast error
- ▶ Previous forecast

Ref: α = Alpha smoothing constant (Handouts page No. 40)

Question No: 15 (Marks: 1) - Please choose one

CBR stands for which one of the following?

- ▶ Commercial board of revenue
- ▶ Central board of recycling
- ▶ Central board of renovation
- ▶ **Central board of revenue**

Ref: CBR denotes Center Board of Revenue (Handouts Page No. 46)

Question No: 16 (Marks: 1) - Please choose one

Which one of the following designs resists modifications?

- ▶ **Frozen design**
- ▶ Product design
- ▶ Service design

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► Robust design

Ref: Another disadvantage is that a manufacturer may freeze (standardize) a **design** prematurely and, once the **design is frozen**, it may find compelling reasons to resist modification.

http://webcache.googleusercontent.com/search?q=cache:ASewL4qNRRkJ:highered.mcgraw-hill.com/sites/dl/free/0073041912/354902/ste41912_ch04.pdf+Frozen+design+%E2%96%BA+Product+design+%E2%96%BA+Service+design+%E2%96%BA+Robust+design+resists+modifications&cd=3&hl=en&ct=clnk&gl=pk&source=www.google.com.pk

[hill.com/sites/dl/free/0073041912/354902/ste41912_ch04.pdf+Frozen+design+%E2%96%BA+Product+design+%E2%96%BA+Service+design+%E2%96%BA+Robust+design+resists+modifications&cd=3&hl=en&ct=clnk&gl=pk&source=www.google.com.pk](http://webcache.googleusercontent.com/search?q=cache:ASewL4qNRRkJ:highered.mcgraw-hill.com/sites/dl/free/0073041912/354902/ste41912_ch04.pdf+Frozen+design+%E2%96%BA+Product+design+%E2%96%BA+Service+design+%E2%96%BA+Robust+design+resists+modifications&cd=3&hl=en&ct=clnk&gl=pk&source=www.google.com.pk)

Question No: 17 (Marks: 1) - Please choose one

Which one of the following is a curve showing failure rate over time?

- Cost curve
- **Bath tub curve**
- Fish bone diagram
- Reliability curve

Ref: The figure above shows a bathtub shape and thus rightly is referred to as the Bathtub curve. On the Y axis we represent the Failure rate and on the X axis we represent the Time. **(Handouts Page No. 60)**

Question No: 18 (Marks: 1) - Please choose one

Which of the following management level is responsible for long-range capacity planning?

- Lower management
- Middle management
- **Top management**
- Non managerial employees

Question No: 19 (Marks: 1) - Please choose one

Capacity planning involves answering all of the following questions EXCEPT:

- What kind of capacity is needed?
- How much is needed?
- When is it needed?
- **Who is going to decide?**

Ref: These questions are:

10. What kind of capacity is needed?

11. How much is needed?

12. When is it needed? **(Handouts Page No. 64)**

Question No: 20 (Marks: 1) - Please choose one

The disadvantages of specialization to management include all of the following EXCEPT:

- More absenteeism

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- ▶ Minimum responsibility
- ▶ More turnover
- ▶ **More difficult to teach the job**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the **Question No. 06**)

Question No: 21 (Marks: 1) - Please choose one
The disadvantages of specialization to management include all of the following EXCEPT:

- ▶ More absenteeism
- ▶ Minimum responsibility
- ▶ More turnover
- ▶ **More difficult to teach the job**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the **Question No. 06**)

Question No: 22 (Marks: 1) - Please choose one

Technology has impacted the work place by:

- ▶ Adding to the existing geographical barriers for recruiting
- ▶ Increasing the cost of telecommuting
- ▶ Increasing the amount required to be spent on training
- ▶ **Unifying the workforce to a common skill level**

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html (See the **Question No. 10**)

Question No: 23 (Marks: 1) - Please choose one

Which of the following can be used to compute standard time?

- ▶ Multiplying the elemental average time by the rating factor
- ▶ Dividing the average elemental time by the rating factor
- ▶ Multiplying the normal cycle time by the rating factor
- ▶ **Multiplying the normal cycle time by one plus the allowance factor**

Ref: Standard Time=ST=NT X AF is the normal time plus allowance for delays like (getting a glass of water or going to the washroom human needs) (**Handouts Page No. 92**)

Question No: 24 (Marks: 1) - Please choose one

Which one of the following is an example of community factors that affect location decisions?

- ▶ Transportation
- ▶ **Quality of life**

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- ▶ Location of new markets
- ▶ Location of raw materials

Ref: Community Considerations

- Quality of life
- Services
- Attitudes
- Taxes
- Environmental regulations
- Utilities
- Developer support

(Handouts Page No. 96)

Question No: 25 (Marks: 1) - Please choose one

Which one of the following is an example of site related factors that affect location decision?

- ▶ **Transportation**
- ▶ Quality of life
- ▶ Location of new markets
- ▶ Location of raw materials

Ref: Site Related Factors

- Land
- Transportation
- Environmental
- Legal

(Handouts Page No. 96)

Question No: 26 (Marks: 1) - Please choose one

Which of the following statements would generally be considered as correct job shop?

- ▶ A continuous process has lower output volume as compared to job shop
- ▶ Equipment flexibility is lower in job shop than that of a continuous process
- ▶ **Labor costs are higher in a Job Shop operation than in most other processes**
- ▶ Batch processing produces a more standard range of products than continuous flow processes

Question No: 27 (Marks: 1) - Please choose one

Which one of the following is TRUE about work sampling?

- ▶ It describes individual human motions that are used in a job task
- ▶ It involves determining the length of time it will take to undertake a particular task
- ▶ **It involves determining the amount of time a worker spends on various activities**
- ▶ It provides standard times for micro motions such as reach, move and release

Ref: Work Sampling is the statistical technique for determining the proportion of time spent by workers in various defined categories of activity.

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http://en.wikipedia.org/wiki/Work_sampling#cite_note-Groover-0

Question No: 28 (Marks: 1) - Please choose one

The purpose of _____ is to coordinate and control all the required sources so that productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control
- ▶ **Demand management**
- ▶ Forecasting
- ▶ Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvgP9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=true

Question No: 29 (Marks: 1) - Please choose one

Forecasting for groups tend to be more accurate than forecasting for individual items because:

- ▶ A group is composed of a number of items
- ▶ A group exhibits a uniform behavior
- ▶ **A group cancels the forecasting errors among items**
- ▶ A group behavior is relatively less uncertain

Ref: Forecasts more accurate for groups vs. individuals naturally because forecasting errors in a group tend to cancel out forecasting errors for individuals. (Handouts page No. 33)

Paper No. 18

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 2)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 ____ (Marks: 1) - Please choose one

Which of the following is **NOT** a decision to be made by operations managers?

- ▶ How much capacity is required to balance demand?
- ▶ What should be the location and layout of a facility?
- ▶ How to improve operational efficiency?

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► Which market areas to manufacture the products for?

Ref:

http://wps.pearsoned.co.uk/ema_uk_he_slack_opsman_4/17/4471/1144826.cw/index.htm

(See the Question No. 08)

Question No: 2 (Marks: 1) - Please choose one

Which one of the following forecasting technique is based on historical data?

► **Time series**

- Qualitative
- Judgmental
- Associative

Ref: Time series - uses historical data assuming the future will be like the past and depend on developing relationships between variables that can be expressed to predict future values. **(Handouts page no. 35)**

Question No: 3 __ (Marks: 1) - Please choose one

Which one of the following is an outcome of Maximax?

► The best of the worst possible payoff

► **The best possible payoff**

► The best average payoff

► The least of the worst regrets

Ref: Maximax:

- Maximax determines
- the best possible outcome
- Choose the Alternative with the best possible payoff.
- It does not take into account any other alternative then the best payoff.
- An optimistic approach.
- Go for it strategy. **(Handouts Page No. 26)**

Question No: 4 __ (Marks: 1) - Please choose one

Given the table:

Possible Alternatives future demand

Possible future demand	
Low (Rs.)	High (Rs.)
10,000	8,000
12,000	20,000
18,000	15,000

Which one of the following is the correct payoff under MAXIMIN approach?

► **Rs. 8,000**

► Rs. 12,000

► Rs. 18,000

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► Rs. 20,000

Ref: Highest minus minimum

MAXMIN = 20000 – 12000 = 8000

Question No: 5 __ (Marks: 1) - Please choose one

A workers strike represents which of the following behaviors of a time series?

- Cycle
- Trend
- Seasonality

► **Irregular variations**

Ref: Irregular variations - caused by unusual circumstances such as severe weathers, earthquakes, worker strikes, or major change in product or service. **(Handouts Page No. 37)**

Question No: 6 (Marks: 1) - Please choose one

Which one of the following is an index used to measure actual output relative to design capacity?

- Efficiency
- Effective capacity
- Effectiveness

► **Utilization**

Ref: It can be expressed as a ratio, where utilization = actual output divided by design capacity. This measure is used in both capacity planning and capacity requirements planning processes. <http://www.bnet.com/topics/capacity+utilization>

Question No: 7 __ (Marks: 1) - Please choose one

What would be the utilization, if 34 cars are produced in a day with a design capacity of 50 cars per day?

► **68%**

- 1.47%
- 84%
- 16%

Ref: Utilization = Actual Capacity / Design Capacity * 100

Utilization = 34 / 50 * 100 = **68%**

Question No: 8 __ (Marks: 1) - Please choose one

Effective capacity is influenced by all of the following factors **EXCEPT:**

- Facilities
- **Product mix**
- Processes
- Operations

Ref: There are 7 determinants of effective capacity namely:

- Facilities.

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- Product and service factors
- Process factors
- Human factors
- Operational factors
- Supply chain factors
- External factors (Handouts Page No. 66 and 67)

Question No: 9 (Marks: 1) - Please choose one

Which one of the following statements represents use of cost-volume analysis?

- ▶ It is a tool for reliability measurement
- ▶ It provides a base for marketing research
- ▶ **It helps in comparing capacity alternatives**
- ▶ It is important in product design

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. The primary purpose of cost volume analysis is to estimate the income of an organization under different operating conditions. It is particularly useful as a tool for comparing capacity alternatives. (Handouts Page No. 73)

Question No: 10 (Marks: 1) - Please choose one

ABC Corporation has planned to purchase a new machine. Total annual fixed cost is Rs. 10,000, variable cost is Rs. 5 per unit and revenue is Rs. 7 per unit. What would be the break even point?

- ▶ 833 units
- ▶ 2000 units
- ▶ **5000 units**
- ▶ 1012 units

Ref: $QBEP = FC / (R - VC)$
 $QBEP = 10000 / (7-5)$
 $QBEP = 10000/2$
QBEP = 5000 Units

Question No: 11 (Marks: 1) - Please choose one

Which of the following terms of financial analysis are important for the organization to proceed with a capacity alternative decision?

- ▶ Cash flow and fixed cost
- ▶ Present value and fixed cost
- ▶ **Cash flow and present value**
- ▶ Cash flow and profit

Ref: Operations manager along with managerial accountant often work to calculate what cash flow or present value in terms of rupees is available for the organization to proceed with a capacity alternative decision. (Handouts Page No. 76)

Question No: 12 (Marks: 1) - Please choose one

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Which of the following is an example of a business that uses assembly line process structure?

- ▶ **Automobile assembly**
- ▶ Sugar refinery
- ▶ Heavy equipment
- ▶ French restaurants

Ref: A good example of an assembly line is an automobile plant.

<http://www.netmba.com/operations/process/structure/>

Question No: 13 (Marks: 1) - Please choose one

Which one of the following is a type of layout where equipment, machinery and people are moved as required?

- ▶ Product layout
- ▶ **Fixed position layout**
- ▶ Process layout
- ▶ Hybrid layout

Ref: Fixed Position layout: A Layout in which the product or project remains stationary, and workers, materials and equipment are moved as needed (**Handouts Page No 80**)

Question No: 14 (Marks: 1) - Please choose one

A self-service cafeteria is usually positioned as:

- ▶ Process layout
- ▶ Fixed position layout
- ▶ Hybrid layout
- ▶ **Product layout**

Ref: In services side, the word line may or may not be used like Healthcare/Hospital Services line, Carwash (absence of word line here) or Cafeteria Line. (**Handouts Page No. 80**)

Question No: 15 (Marks: 1) - Please choose one

Which one of the following mathematical expressions can be used to compute output capacity?

- ▶ **OT/CT**
- ▶ CT/OT
- ▶ CT+OT
- ▶ CT-OT

Ref: $OC = \text{Output Capacity} = OT/CT$ (**HANDOUTS PAGE NO. 85**)

Question No: 16 (Marks: 1) - Please choose one

Which one of the following types of manufacturing layout is considered a hybrid?

- ▶ Process layout
- ▶ Product layout

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► Fixed-position layout

► **All of the given options**

Ref: Hybrid/Combination: A Layout that makes use of the combination of Product, Process or Fixed Position Layout. **(Handouts Page No. 80)**

Question No: 17 (Marks: 1) - Please choose one

Which of the following forecasting technique is based on the assumption that past data is more indicative of the future than the most recent occurrences?

► **Exponential smoothing**

► Linear regression

► Judgmental forecast

► Naive forecast

Ref: In many applications (perhaps in most), the most recent occurrences are more indicative of the future than those in the more distant past. If this premise is valid – “that the importance of data diminishes as the past becomes more distant” - then exponential smoothing may be the most logical and easiest method to use.

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+Exponential+smoothing+is+based+on+the+assumption+that+past+data+is+more+indicative+of+the+future+than+the+most+recent+occurrences&hl=en&gl=pk&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMllzbF5wpl0nxlgJ8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEtbTwalQd7sTFtecd46RVg72u_ZLEeg

Question No: 18 (Marks: 1) - Please choose one

Which one of the following is responsible for administering environmental issues about product and service design?

► Central Board of Revenue

► **Environmental Protection Agency**

► Federal Drug Agency

► **Occupational Safety Hygiene Administration**

Ref: Environmental. Operations Manager should also work with in the same Environmental laws as his organization. EPA is active in all countries including Pakistan and even a CEO can be jailed if there is a failure to comply with the Environment laws.

(HANDOUS PAGE NO. 47)

Question No: 19 __ (Marks: 1) - Please choose one

Which of the following factors are considered in product and service design?

► Customer satisfaction, quality, and improvement costs

► Employee motivation, quality, and production costs

► Customer satisfaction, flexibility, and production costs

► **Customer satisfaction, quality, and production costs**

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Ref: A good product/service design can ensure customer satisfaction, quality and production costs. (Handouts Page No. 44)

Question No: 20 (Marks: 1) - Please choose one
OSHA stands for which one of the following?

- ▶ Occupational stock hygiene administration
- ▶ **Occupational safety hygiene administration**
- ▶ Occupational safety hygiene agency
- ▶ Occupational science hygiene administration

Ref: OSHA refers to Occupational Safety Hygiene Administration (Handouts Page No. 46)

Question No: 21 (Marks: 1) - Please choose one

In order to comply with the environmental standards, an organization ABC has to implement Occupational Safety Hygiene Administration (OSHA). Which one of the following is a way to accomplish this task?

- ▶ Promoting friendly relations among employees
- ▶ **Installing safety guards and devices to reduce the risk of potential accidents**
- ▶ Installing machinery to make the process speedy
- ▶ Installing machinery that provides cost effective output

Ref: The main objective of this work was to analyze the occupational health and safety issues in the steel/iron re-rolling mills. The objectives are to identify the workplace accident risks and to certain the recommendations to evade these risks.

<http://docs.google.com/viewer?a=v&q=cache:5vmpOun33BQJ:www.iepkc.org/7nsohs/papers/A%2520Case%2520Study%2520OHS%2520---%2520Islamabad%2520-%2520Hira%2520amjad.pdf+Occupational+Safety+Hygiene+Administration+implement+Installing+safety+guards+and+devices+to+reduce+the+risk+of+potential+accidents&hl=en&gl=pk&pid=bl&srcid=ADGEESjVCZsxhbtlk27ez2kiT48yWHNjBP4Bp7xDrAzKH20QcL-xkgZ12tEUONHstpxC9sZtu0YVJRdkLbZmU8OnSgFUMFeuyZG1K-PSYHgkMWGC92SFqlfcxwSZtaGplwWzA4ITVu-m&sig=AHIEtbQWvnlCJkI11nBMwos8uPmV4XYeRg>

Question No: 22 (Marks: 1) - Please choose one
Which one of the following designs resists modifications?

- ▶ **Frozen design**
- ▶ Product design
- ▶ Service design
- ▶ Robust design

Ref: Another disadvantage is that a manufacturer may freeze (standardize) a **design** prematurely and, once the **design** is **frozen**, it may find compelling reasons to resist modification.

<http://webcache.googleusercontent.com/search?q=cache:ASewL4qNRRkJ:highered.mcgr>

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hill.com/sites/dl/free/0073041912/354902/ste41912_ch04.pdf+Frozen+design+%E2%96%BA+Product+design+%E2%96%BA+Service+design+%E2%96%BA+Robust+design+resists+modifications&cd=3&hl=en&ct=clnk&gl=pk&source=www.google.com.pk

Question No: 23 __ (Marks: 1) - Please choose one

Which one of the following is TRUE about Taguchi Approach?

▶ **To test the robustness of a design**

- ▶ To articulate the “voice of the customer”
- ▶ To reduce the degree of automation
- ▶ To create a concurrent design

Ref: The defining characteristics for the Taguchi approach include:

- Design a robust product
- Insensitive to environmental factors either in manufacturing or in use.
- Central feature is Parameter Design. **(Handouts Page No. 52)**

Question No: 24 __ (Marks: 1) - Please choose one

Which one of the following refers to a design that takes into account organization's operational capabilities, when designing a product?

▶ Design for assembly

▶ **Design for manufacturing**

▶ Design for recycling

▶ Design for disassembly

Ref: Design for Manufacturing (DFM): The designers' consideration of the organization's manufacturing capabilities when designing a product. **(Handouts Page No. 51)**

Question No: 25 (Marks: 1) - Please choose one

Which one of the following refers to using some of the components of old products in the manufacturing of new products?

▶ Manufacturability

▶ **Remanufacturing**

▶ Robust design

▶ Automation

Ref: Design for Remanufacturing: Using some of the components of the old products in the manufacture of new products. **(Handouts Page No. 51)**

Question No: 26 __ (Marks: 1) - Please choose one

MTBF refers to which of the following?

▶ Measure time before failure

▶ **Mean time between failures**

▶ Mean time before failure

▶ Measure test before failure

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Ref: We represent mean time between failures by MTBF (Handouts Page No. 63)

Question No: 27 ____ (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 300 hours between repairs, and the mean repair time is expected to be 2 hours?

- ▶ 6.02
- ▶ 2.0
- ▶ **0.99**
- ▶ 0.006

Ref: Availability = (MTBF) / (MTBF + MTR)

MTBF = Mean time between factor = 300

MTR = Mean repair time = 2 hours

Availability = (300) / (300+2)

Availability = 300 / 302

Availability = 0.99

Question No: 28 ____ (Marks: 1) - Please choose one

Which of the following management level is responsible for long-range capacity planning?

- ▶ Lower management
- ▶ Middle management
- ▶ **Top management**
- ▶ Non managerial employees

Question No: 29 (Marks: 1) - Please choose one

Capacity planning involves answering all of the following questions EXCEPT:

- ▶ What kind of capacity is needed?
- ▶ How much is needed?
- ▶ When is it needed?
- ▶ **Who is going to decide?**

Ref: These questions are:

13. What kind of capacity is needed?

14. How much is needed?

15. When is it needed? (Handouts Page No. 64)

Question No: 30 (Marks: 1) - Please choose one

Which one of the following is the goal of method analysis?

- ▶ **Dividing and analyzing a job**
- ▶ Check individual human motions used to perform an operation
- ▶ Determining the length of time it will take to undertake a particular task
- ▶ Determining the amount of time a worker spends on various activities

Ref: Design of Work Systems is used to describe the two basic approaches to job design.

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(Handouts Page No. 87)

Question No: 31 (Marks: 1) - Please choose one

Which one of the following is the goal of work sampling?

- ▶ Individual human motions that are used in a job task
- ▶ Determining the length of time it will take to undertake a particular task
- ▶ **Determining the amount of time a worker spends on various activities**
- ▶ Specifying the content and methods to perform a job

Ref:

http://books.google.com.pk/books?id=B5j4D0U6QA0C&pg=PA127&lpg=PA127&dq=Determining+the+amount+of+time+a+worker+spends+on+various+activities&source=bl&ots=geHI2-3mR0&sig=eqWNikcpWGAHCSZtR7taWats1Dc&hl=en&ei=tvb-S8S2DpSh_Abt1pimCw&sa=X&oi=book_result&ct=result&resnum=10&ved=0CEQQ6AEwCQ#v=onepage&q&f=false (See the Activity Sampling Second Paragraph)

Question No: 32 (Marks: 1) - Please choose one

Which one of the following refers to a team having representatives from different functional areas of the organization?

- ▶ Traditional work group
- ▶ Self-directed team
- ▶ **Cross-functional team**
- ▶ Self motivated team

Ref: While having representatives from different functions as team members is predicted to facilitate communication with non-team members from those functions, this structure may also create internal conflicts.

<http://docs.google.com/viewer?a=v&q=cache:CpKetaj5A98J:dspace.mit.edu/bitstream/handle/1721.1/2310/SWP-3179-22870423.pdf%3Fsequence%3D1+team+having+representatives+from+different+functional+areas+of+the+organization&hl=en&gl=pk&pid=bl&srcid=ADGEESiZz0JtbazwsFj3WOxuhpTDJ3LMgStdq5o3KAjjil6-ogLEsA07go0PRGGxnd9tFSN1EyQmfkxsF36ST6PakVPq8W0sFVgyN0kKutPRmM5vpEAOtjjM1eJkQDDCvaG0-o0P0BC5&sig=AHIEtbQPvW7bHUJDdOn5ZCFS7AOy6L3gTA>

Question No: 33 (Marks: 1) - Please choose one

Which one of the following is NOT a business application of forecasting?

- ▶ Budgeting
- ▶ Capacity planning
- ▶ Inventory management
- ▶ **Quality control**

Ref: Forecasting in business forms the basis for budgeting and planning for capacity, sales, production, inventory, manpower, purchasing and more. (Handouts Page No. 31)

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Question No: 34 __ (Marks: 1) - Please choose one

Which one of the following factors makes a forecast LESS perfect?

▶ **Randomness**

- ▶ Non serious attitude
- ▶ Non availability of data
- ▶ Un qualified personnel

Ref: Forecasts rarely perfect because of RANDOMNESS (having no specific pattern). Allowances should be made for inaccuracies. (Handouts Page No. 33)

Question No: 35 (Marks: 1) - Please choose one

An example of a business/industry that uses batch flow process structure is:

- ▶ Commercial printer
- ▶ **Heavy equipment**
- ▶ Automobile assembly
- ▶ Sugar refinery

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html (See the Question No. 04)

Question No: 36 __ (Marks: 1) - Please choose one

Which one of the following is TRUE about work sampling?

- ▶ It describes individual human motions that are used in a job task
- ▶ It involves determining the length of time it will take to undertake a particular task
- ▶ **It involves determining the amount of time a worker spends on various activities**
- ▶ It provides standard times for micro motions such as reach, move and release

Ref: **Work Sampling** is the statistical technique for determining the proportion of time spent by workers in various defined categories of activity.

http://en.wikipedia.org/wiki/Work_sampling#cite_note-Groover-0

Question No: 37 (Marks: 1) - Please choose one

Which of the following is a difference of service organizations as compared to manufacturing organizations?

- ▶ Manufacturing organizations are more specialized than service organizations
- ▶ Manufacturing firms have more variety than service organizations.
- ▶ Service firms are more flexible than manufacturing organizations
- ▶ **Manufacturing decisions are made by maximizing the profit potential**

Ref: Often, in manufacturing, decisions must be made that involve optimization: minimizing costs, minimizing materials waste, maximizing profit, etc.

<http://www.justanswer.com/math/35zql-introduction-often-manufacturing-decisions-made.html>

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Question No: 38 (Marks: 1) - Please choose one

All of the following are examples of time based strategies **EXCEPT**:

- ▶ Products /service design time
- ▶ Processing time
- ▶ Response time for complaints
- ▶ **Response time for innovation**

Ref: There are 6 time based strategies namely:-

7. **Planning Time:** The time required to react to a competitive threat, or to adopt new technologies, or to approve changes to an existing facility
8. **Products/Service Design Time:** The time needed to develop or market new or redesigned products or services
9. **Processing Time:** The time required to produce goods or services, includes repairing equipment, quality training, inventory etc
10. **Changeover Time:** is the time needed to change from producing one type of product or service to another. New model, new insurance /health service.
11. **Delivery Time:** is the time needed to fill orders.
12. **Response Time for complaints:** is the required to improve the model or service features according to customer inputs and improving employee working conditions.

(HANDOUTS PAGE NO. 18)

Question No: 39 ____ (Marks: 1) - Please choose one

_____ purpose is to coordinate and control all the required sources so that productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control
- ▶ **Demand management**
- ▶ Forecasting
- ▶ Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvgP9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=tr

Question No: 40 (Marks: 1) - Please choose one

Which one of the following is an advantage of a moving average forecast?

- ▶ All the values in the average are weighted equally.
- ▶ The method is reliable to forecast the demand accurately
- ▶ **The method is easy to compute and easy to understand**

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- The most recent values are given the more weightage

Ref: Advantages of Moving Average Method

- Easily understood
- Easily computed
- Provides stable forecasts

http://docs.google.com/viewer?a=v&q=cache:wdnWQylxOkAJ:www.d.umn.edu/~rlindek1/POM/assets/IE3265_Forecasting.ppt+advantage+of+a+moving+average+forecast&hl=en&gl=pk&pid=bl&srcid=ADGEEShZWwuvuyYw3Thz0ywlMM_XmAjhWxa6y4_LN7PGbT0-xCjPa35T90GFnDvpcD_7xZ1wkiBOTsXkZA2ZfN1Rd0P250U9qN4pxWwnzD-KXlg3KxH2E5rrMrYEBizLt0onkUu4mgYP&sig=AHIEtbT3x_6N1LZaW2zQxpF7dpCl59PxTA

Paper No. 19

MIDTERM EXAMINATION

Spring 2009

MGT613- Production / Operations Management (Session - 2)

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Within the operations function, which one of the following is a long-term management decision?

- Control decision
- Non-operational decision
- **Strategic decision**
- Tactical decision

Ref: Strategic Importance

1. Long term commitment/costs
2. Impact on investments, revenues, and operations
3. Supply chains (Handouts Page No. 95)

Question No: 2 (Marks: 1) - Please choose one

Which one the following formula or function can be used to measure the performance?

- Flexibility + profit+ operations
- Work + profit + value
- **Quality + speed + flexibility**
- Profit + Incentives + standards

Ref: Value= Performance/Cost= (Quality +Speed+ Flexibility)/Cost
(Handouts page No. 10)

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Question No: 3 (Marks: 1) - Please choose one

Which of the following statements corresponds to an order-winning characteristic?

- ▶ A factor which may be significant in other parts of the organization
- ▶ **A factor which gives an organization a competitive edge**
- ▶ A factor which serves as a minimum standard for purchase
- ▶ A factor which increases the profitability of the organization

Ref: order winners are the characteristics of an organization's services that cause it to be perceived as better than the competitor's services. (Handouts Page No. 15)

Question No: 4 (Marks: 1) - Please choose one

As a manager, you have defined the purpose of the forecasts. What should be the next step in forecasting process?

- ▶ Choose a forecasting technique.
- ▶ Determine the purpose of the forecast.
- ▶ **Set up a time horizon or a time limit.**
- ▶ Collect and analyze the appropriate data.

Ref: Steps in the Forecasting Process:

- **Determine the purpose of the forecast:** meaning what is the purpose and when will it be required. This will provide the level of detail for resources required man, machine, time and capital.
- **Establish a time horizon:** We already know that as time increases the accuracy of the Forecast decreases.
- **Select a forecasting technique:** whether qualitative or quantitative
- **Gather and analyze the appropriate data:** It goes without saying that before a forecast can be delivered data is required. The closer the real life data more realistic would be the forecast. This may be the time when you would like to identify the important assumptions and suppositions.
- **Prepare the forecast:**
- **Monitor the forecast:** A forecast has to be closely monitored to determine whether it is fulfilling its basic purpose. This helps in re-examining the method, assumptions and validity of the data and preparing a revised forecast.

Question No: 5 (Marks: 1) - Please choose one

Which one of the following forecasting technique is based on historical data?

- ▶ **Time series**
- ▶ Qualitative
- ▶ Judgmental
- ▶ Associative

Ref: Time series - uses historical data assuming the future will be like the past and depend on developing relationships between variables that can be expressed to predict future values. (Handouts page no. 35)

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Question No: 6 (Marks: 1) - Please choose one

Which one of the following forecasting techniques use subjective inputs su from consumer surveys, sales staff, managers and experts?

- ▶ Time series
- ▶ Quantitative
- ▶ **Judgmental**
- ▶ Associative

Ref: Judgmental - uses subjective inputs meaning that a judgmental forecast rely on analysis of subjective inputs obtained from various sources, such as consumer surveys, the sales staff, managers and executives, and panels of experts. These insights are not available publicly. (Handouts Page No. 35)

Question No: 7 (Marks: 1) - Please choose one

Which of the following approaches favours adopting a “go for it” strategy?

- ▶ Maximin
- ▶ **Maximax**
- ▶ Minimax regret
- ▶ Laplace

Ref: Maximax:

- Maximax determines
 - the best possible outcome
 - Choose the Alternative with the best possible payoff.
 - It does not take into account any other alternative then the best payoff.
 - An optimistic approach.
 - Go for it strategy.
- (Handouts Page No. 26)

Question No: 8 (Marks: 1) - Please choose one

Given the table:

Alternatives	Possible future demand	
	Low (Rs.)	High (Rs.)
Small facility	10,000	8,000
Medium facility	12,000	20,000
Large facility	18,000	15,000

Which one of the following is the correct payoff under MAXIMAX approach?

- ▶ Rs. 10,000
- ▶ Rs.18,000
- ▶ **Rs.20,000**
- ▶ Rs.32,000

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Ref: Choose the Best maximum Value for MAXIMAX approach.

Question No: 9 (Marks: 1) - Please choose one

Which one of the following is NOT a step of decision making process?

- ▶ Develop alternatives
- ▶ Monitor results
- ▶ **Consider risk averseness strategies**
- ▶ Specify criteria for decision

Ref: Normally the decision making process involves the following six important steps

13. Specify Objectives and the Criteria for decision making
14. Develop Alternatives
15. Analyze and compare alternatives.
16. Select the best alternative.
17. Implement the chosen Alternative
18. Monitor the results to ensure the desired results are achieved.

(Handouts Page No. 24)

Question No: 10 (Marks: 1) - Please choose one

Which one of the following stages of product life cycle relates to more predictable behavior in terms of capacity requirements?

- ▶ Introduction
- ▶ Growth
- ▶ **Maturity**
- ▶ Decline

Ref: Maturity Stage. As the products of firms move into the maturity stage, attracting highly skilled individuals is no longer as high a priority. Firms in the mature stage have an extensive internal labour market and extensive training and development programs. Firms in this stage may pay high wages to retain skilled talent. Economic downturns are handled by employee layoffs. Conflict resolutions and due process under collective bargaining are the grievance procedures with third party arbitration (Kochan & Chalykoff, 1985). **The environment (customer demand and competitors) becomes more stable and predictable (but as competitive) in comparison with the growth stage.**

[http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sjacksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=en&gl=pk&pid=bl&srcid=ADGEEsigJYxwqHconGqfCMjw0LjJ83rXBJuDpDj9ii07-2VUwmVTBF6K-](http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sjacksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=en&gl=pk&pid=bl&srcid=ADGEEsigJYxwqHconGqfCMjw0LjJ83rXBJuDpDj9ii07-2VUwmVTBF6K-Xm7xu1THfTijPxrbbqKJD0KKZziOIaotlvC4pPqcxwZ2J3KdX3QIQo8iw3VCTRAsXg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMIRvbg)

[Xm7xu1THfTijPxrbbqKJD0KKZziOIaotlvC4pPqcxwZ2J3KdX3QIQo8iw3VCTRAsXg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMIRvbg](http://docs.google.com/viewer?a=v&q=cache:jQVb4SnKAYsJ:www.rci.rutgers.edu/~sjacksox/PDF/DeterminantsofHRMPrioritiesandImplications.pdf+stages+of+product+life+cycle+relates+to+more+predictable+behavior+in+terms+of+capacity+requirements&hl=en&gl=pk&pid=bl&srcid=ADGEEsigJYxwqHconGqfCMjw0LjJ83rXBJuDpDj9ii07-2VUwmVTBF6K-Xm7xu1THfTijPxrbbqKJD0KKZziOIaotlvC4pPqcxwZ2J3KdX3QIQo8iw3VCTRAsXg2Pk69UvRqQsYng7dB&sig=AHIEtbS89CgRHNC6-p0WknAgth-vMIRvbg)

Question No: 11 (Marks: 1) - Please choose one

Which one of the following statement is TRUE about cost-volume relationship?

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► **It represents the relationship between cost, revenue and volume of output.**

- It represents the relationship between cost and volume of output.
- It represents the relationship between cost and revenue.
- It represents the relationship between inputs, cost and volume of output.

Ref: Cost Volume Relationship focuses on relationships between costs, revenue and volume of output. (Handouts Page No. 73)

Question No: 12 (Marks: 1) - Please choose one

Which one of the following formulae can be used to compute break even point?

► $Q = VC / (R - VC)$

► **$Q = FC / (R - VC)$**

► $Q = VC / (R + FC)$

► $Q = FC / (R + VC)$

Ref: QBEP= FC/ (R-VC) (Handouts Page No. 76)

Question No: 13 (Marks: 1) - Please choose one

Which of the following is a system designed to coordinate all activities and information needed to complete business processes?

► **Enterprise resource planning**

- Supply chain management
- New product development
- Customer relationship management

Ref: Enterprise resource planning (ERP) is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes such as order fulfillment or billing.

<http://www.zbeanztech.com/open-source-erp>

Question No: 14 (Marks: 1) - Please choose one

Which of the following is **NOT** a characteristic of product layouts?

► **High material handling costs**

- Sequential arrangement of machines
- Standardized output
- Continuous production system

Ref: <http://www.authorstream.com/Presentation/partha.chatterjee004-831897-plant-layout/> (See the Slide No. 5 and 6)

Question No: 15 (Marks: 1) - Please choose one

Which one of the following refers to using some of the components of old products in the manufacturing of new products?

- Manufacturability
- **Remanufacturing**
- Robust design
- Automation

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Ref: Design for Remanufacturing: Using some of the components of the old products in the manufacture of new products. **(Handouts Page No. 51)**

Question No: 16 (Marks: 1) - Please choose one

What would be the availability if a carpenter is expected to be able to operate for 250 hours between repairs, and the mean repair time is expected to be 3 hours?

- ▶ 1.01
- ▶ 5.03
- ▶ 3.0
- ▶ **0.98**

Ref: Availability = (MTBF) / (MTBF + MTR)

Availability = 250 / (250+3)

Availability = 250 / 253 = **0.988**

Question No: 17 (Marks: 1) - Please choose one

Which one of the following is the goal of method analysis?

▶ **Dividing and analyzing a job**

- ▶ Check individual human motions used to perform an operation
- ▶ Determining the length of time it will take to undertake a particular task
- ▶ Determining the amount of time a worker spends on various activities

Ref: Design of Work Systems is used to describe the two basic approaches to job design. **(Handouts Page No. 87)**

Question No: 18 (Marks: 1) - Please choose one

Which one of the following is an example of regional factors that affect location decisions?

- ▶ Transportation
- ▶ Quality of life
- ▶ Development support
- ▶ **Location of new markets**

Ref: Regional Factors

13. Location of raw materials

14. Location of markets

15. Labor factors

16. Climate and taxes **(Handouts Page No. 96)**

Question No: 19 (Marks: 1) - Please choose one

Which one of the following statements is **true** about Occupational Safety Hygiene Administration (OSHA)?

- ▶ **To safeguard against potential hazards**
- ▶ To develop cost effective processes
- ▶ To implement legal standards

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- ▶ To carry out implication of manufacturability and fitness

Ref: Under the OSH Act, OSHA develops and sets mandatory occupational safety and health requirements applicable to the more than 6 million workplaces in the U.S. OSHA relies on, among many others, industrial hygienists to evaluate jobs for potential health hazards.

<http://www.laborcommission.utah.gov/UOSH/Outreach/ConstructionCD/www.osha.gov/SLTC/smallbusiness/sec5.html>

Question No: 20 (Marks: 1) - Please choose one

Which one of the following is used to produce gasoline and petroleum products?

- ▶ Job shop
- ▶ Batch processing
- ▶ Assembly line
- ▶ **Continuous processing**

Ref: http://highered.mcgraw-hill.com/sites/0073403296/student_view0/chapter7/multiple_choice_quiz.html (See the Question No. 02)

Question No: 21 (Marks: 1) - Please choose one

The type of processing structure that is used for producing discrete products at higher volume is:

- ▶ Continuous Flow
- ▶ **Assembly Line**
- ▶ Batch
- ▶ Job shop

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html (See the Question No. 3)

Question No: 22 (Marks: 1) - Please choose one

An example of a business/industry that uses batch flow process structure is:

- ▶ Commercial printer
- ▶ **Heavy equipment**
- ▶ Automobile assembly
- ▶ Sugar refinery

Ref: http://highered.mcgraw-hill.com/sites/0072983906/student_view0/chapter6/multiple_choice_quiz.html (See the Question No. 04)

Question No: 23 (Marks: 1) - Please choose one

Quality, costs, lead times, operating resources are all related to which one of the following strategies.

- ▶ Organizational strategy

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► Financial strategy

► **Operational strategy**

► Tactical strategy

Ref: OPERATIONS STRATEGY: (Deals with the operations aspect of an organization).

OS is related to products, processes, methods, operating resources, quality, costs, lead times, and scheduling.

http://docs.google.com/viewer?a=v&q=cache:Z8OTKodTI24J:bulatov.org.ua/teaching_courses/nam_operations/L2%2520PRODUCTIVITY,%2520COMPETITIVENESS,%2520STRATEGY.doc+Quality,+costs,+lead+times,+operating+resources+are+all+related+to+Operational+strategy&hl=en&pid=bl&srcid=ADGEESjFppdZdPqJCYGeE5eZ0lbXSbBIaQuAZHRq8WGSAb060LQFyePsZ7uLK3tBxikelBwidDvqI2uehI7dlnTODYpZMU2xVYk6oWk7IHpLh4hW3Brot6pOUAe-f0XbM42tJV6kLRzg&sig=AHIEtbTIW5C5SYPMTZqjIHd9wX_vuoJE6g

Question No: 24 (Marks: 1) - Please choose one

All of the following are examples of the transformation process EXCEPT:

► Cutting

► Packing

► **Facilitating**

► Labeling

Ref: Examples of Transforming process and input in Food Processor:

Inputs

Raw vegetables

Metal sheets

Water

Energy

Labor

Building

Equipment

Process

cleaning

Making cans

Making cans

Cutting

Cooking

Packing

Labeling

http://docs.google.com/viewer?a=v&q=cache:27Zjwa-o6_kJ:highered.mcgraw-hill.com/sites/dl/free/0070951675/436573/samplech01.pdf+examples+of+the+transformation+process+are+Cutting+%E2%96%BA+Packing+%E2%96%BA+Facilitating+%E2%96%BA+Labeling&hl=en&pid=bl&srcid=ADGEESi98aGPPXv5w0w-VBGRprednU-ENzzYtfDBdUf5sT5vBu0th2m1l74tG1Qt4oZOb-Fa69OEDb-QWocDFhQvspN6W9p8LqyxNvDaLoKOWUVy-rmCYeoSCBOUcIepGwcQPLn7s&sig=AHIEtbQ8kba9NbTRC4loArQHIWN-H50AoQ

Question No: 25 (Marks: 1) - Please choose one

Which of the following is a characteristic of linear regression?

► It is superior to a moving average

► **It is a causal forecasting model**

► It compensates for both trend and seasonal variations in demand

► It is superior to an exponential smoothing

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Ref: Linear regression is used both for time series forecasting and for casual relationship forecasting. When the dependent variable (usually the vertical axis on the graph) changes as a result of time (plotted on the horizontal axis), it is time series analysis. When the dependent variable changes because of the change in another variable, this is a casual relationship (such as the demand of cold drinks increasing with the temperature).

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+linear+regression+compensates+for+both+trend+and+seasonal+variations+in+demand&hl=en&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMlIzbF5wpI0nxIgJ8KnR5-4fdDQIvMBxXbViOzr6hLd0Xq3ud6w8Ed-BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEtbQweGQ9quetmEqfenwFdiUUE2eZeg

Paper No. 20

MIDTERM EXAMINATION

Spring 2010

MGT613- Production / Operations Management

Solved By Honey G <abdulhaiee2004@gmail.com>

Question No: 1 (Marks: 1) - Please choose one

Which of the following statements describes an order-qualifier characteristic?

- ▶ A competitive dimension used to make final decision among competitors
- ▶ A factor which directly and significantly contribute to winning business
- ▶ A factor which increases the profitability of the organization
- ▶ **A factor perceived as a minimum standard as a potential for purchase**

Ref: Order qualifiers are those significant characteristics that service customers perceive as minimum standards of acceptability to be considered as a potential purchase while order winners (**Handouts Page No. 15**)

Question No: 2 (Marks: 1) - Please choose one

In which one of the following decision environments it is impossible to assess the likelihood of various future events?

- ▶ Risk
- ▶ Bounded rationality
- ▶ Certainty
- ▶ **Uncertainty**

Ref: Uncertainty: environments it is impossible to assess the likelihood of various future events. <http://nrmt.files.wordpress.com/2011/04/15-decision-making-strategies.pdf>

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Question No: 3 (Marks: 1) - Please choose one

Which one of the following is an outcome of MINIMAX regret?

- ▶ The best of the worst possible payoff
- ▶ The best possible payoff
- ▶ The best average payoff
- ▶ **The least of the worst regret**

Ref: Minimax Regret: Determines the worst regret for each alternative (**Handouts Page No. 27**)

Question No: 4 (Marks: 1) - Please choose one

Which one of the following is a limitation of a moving average having a trend?

- ▶ **The forecast lags behind the actual**
- ▶ The forecast represents demand more accurately
- ▶ The forecast will not be accurate
- ▶ The forecast will not be reliable

Ref: If, over several periods, a time series shows a change in the average value which corresponds to the trend model, the forecast values always lag behind the actual values by one or several periods in the first-order exponential smoothing procedure.
http://help.sap.com/saphelp_45b/helpdata/en/a5/6320e843a211d189410000e829fbbd/content.htm

Question No: 5 (Marks: 1) - Please choose one

Which of the following is an example of a business that uses assembly line process structure?

- ▶ **Automobile assembly**
- ▶ Sugar refinery
- ▶ Heavy equipment
- ▶ French restaurants

Ref: A good example of an assembly line is an automobile plant.
<http://www.netmba.com/operations/process/structure/>

Question No: 6 (Marks: 1) - Please choose one

Which one of the following layout types is associated with car assembly?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ **Product layout**
- ▶ Hybrid layout

Ref: Product – Layout should suit to the nature of product and its method of production. I.e. aircraft manufacturing and car manufacturing layouts will be different. Sales also affect the layout. <http://www.scribd.com/doc/7369836/Facility-Layout>

Question No: 7 (Marks: 1) - Please choose one

A department store discovered that in a four-month period, the best forecast can be

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determined by using 50 percent of the sales for the most recent month, 20 percent of the sales of two months ago, 10 percent of the sales of three months ago, and 20 percent of the sales of four months ago. Which forecasting method should the store use to forecast demand?

- ▶ Simple Moving Average
- ▶ Linear Regression
- ▶ Time Series Analysis
- ▶ **Weighted Moving Average**

Ref: Weighted Moving Average

Whereas the simple moving average gives equal weight to each component of the moving average database, a weighted moving average allows any weights to be placed on each element, providing, of course, that the sum of all weights equals 1. **For example**, a department store may find that in a four-month period, the best forecast is derived by using 40 percent of the actual sales for the most recent month, 30 percent of two months ago, 20 percent of three months ago, and 10 percent of four months ago.

http://docs.google.com/viewer?a=v&q=cache:QTJvd6__zt8J:nsdl.niscair.res.in/bitstream/123456789/829/1/CHAPTER-6%2BFORECASTING%2BTECHNIQUES-%2BFormatted.pdf+A+department+store+discovered+that+in+a+four-month+period,+the+best+forecast+can+be+determined+by+using+50+percent+of+the+sales+for+the+most+recent+month,+20+percent+of+the+sales+of+two+months+ago,+10+percent+of+the+sales+of+three+months+ago,+and+20+percent+of+the+sales+of+four+months+ago.+Which+forecasting+method+should+the+store+use+to+forecast+demand+%3F+%E2%96%BA+Simple+Moving+Average+%E2%96%BA+Linear+Regression+%E2%96%BA+Time+Series+Analysis+%E2%96%BA+Weighted+Moving+Average&hl=en&gl=pk&pid=bl&srcid=ADGEESg3c6cLEJGxFAeYDJmynagPFzwnMllzbF5wpl0nxlgJ8KnR5-4fdDQlvMBxXbViOzr6hLd0Xq3ud6w8Ed-BwMdhALCi9obVbWP0pS7MXJEau43xq_TfOulMECZdpwnV3g0TLOyY&sig=AHIEtbR6QAx5fG8CQkeTPpk7SBvpbuE11A

Question No: 8 (Marks: 1) - Please choose one

Which one of the following statements is TRUE about product life cycle?

- ▶ It depicts demand of a product at various price levels
- ▶ **It depicts demand of a product with respect to time**
- ▶ It relates demand of a product to quality
- ▶ It relates demand of a product to market share

Ref: (See the handouts Page No.50 Diagrammed)

Question No: 9 (Marks: 1) - Please choose one

Which of following statement is **true** about effective capacity?

- ▶ It is the actual output achieved
- ▶ It is always less than actual output
- ▶ It is the maximum output that a firm can produce.
- ▶ **It is always less than designed capacity**

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Ref:

http://books.google.com.pk/books?id=wUHzc8JtZzUC&pg=PA249&dq=effective+capacity+It+is+the+actual+output+achieved&hl=en&ei=4WV3TfycOIio8AP885jPCw&sa=X&oi=book_result&ct=result&resnum=1&sqi=2&ved=0CCcQ6AEwAA#v=onepage&q=effective%20capacity%20It%20is%20the%20actual%20output%20achieved&f=false

(Read the 3rd Paragraph)

Question No: 10 (Marks: 1) - Please choose **one**

Which one of the following refers to bringing together engineering design and manufacturing personnel early in the design phase?

- ▶ Reverse engineering
- ▶ **Concurrent engineering**
- ▶ Manufacturability
- ▶ Serviceability

Ref: Concurrent engineering is the bringing together of engineering design and manufacturing personnel early in the design phase. **(Handouts page no. 53)**

Question No: 11 (Marks: 1) - Please choose one

Which of the following refers to the way an organization chooses to produce its goods or services?

- ▶ **Process selection**
- ▶ Process reengineering
- ▶ Process redesign
- ▶ Process design

Ref: Process Selection refers to the way an organization chooses to produce its good or services. **(Handouts Page No. 77)**

Question No: 12 (Marks: 1) - Please choose one

The purpose of _____ is to coordinate and control all the required sources so that productive system can be used efficiently and to ensure the delivery of product in time.

- ▶ Total quality control
- ▶ **Demand management**
- ▶ Forecasting
- ▶ Operations management

Ref:

http://books.google.com/books?id=d3eREcsD35sC&pg=PA551&dq=The+purpose+of+demand+management+is+to+coordinate+and+control+all+sources+of+demand+so+the+productive+system+can+be+used+efficiently+and+the+product&hl=en&ei=gTCOTfjdJpCmvGp9pbC5DQ&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDkQ6AEwAg#v=onepage&q=The%20purpose%20of%20demand%20management%20is%20to%20coordinate%20and%20control%20all%20sources%20of%20demand%20so%20the%20productive%20system%20can%20be%20used%20efficiently%20and%20the%20product&f=true

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Question No: 13 (Marks: 1) - Please choose one

Which of the following is **NOT** an attribute to classify services?

- ▶ **Tangibility**
- ▶ Perishability
- ▶ Simultaneity
- ▶ Courtesy

Ref: Services are all intangible. For example cleaning something or delivering a pizza they are services they don't produce anything.

<http://answers.yahoo.com/question/index?qid=20090320204146AAIPtZT>

Question No: 14 (Marks: 1) - Please choose one

Which of the following is NOT an emerging trend in the workplace?

- ▶ Increasing workplace diversity
- ▶ **Decreasing work schedule flexibility**
- ▶ Increasing number of part time jobs
- ▶ Increasing use of temporary labor

Ref: http://highered.mcgraw-hill.com/sites/0072402857/student_view0/chapter10/multiple_choice_quiz.html

(See the Question No. 09)

Question No: 15 (Marks: 1) - Please choose one

Which method of forecasting is most widely used?

- ▶ Regression analysis
- ▶ Adaptive forecasting
- ▶ Weighted moving average
- ▶ **Exponential smoothing**

Ref: Exponential smoothing is a widely method used of forecasting based on the time series itself. Unlike regression models, exponential smoothing does not imposed any deterministic model to fit the series other than what is inherent in the time series itself.

<http://home.ubalt.edu/ntsbarsh/stat-data/forecast.htm>

Question No: 16 (Marks: 1) - Please choose one

Which one of the following is concerned with short term capacity needs?

- ▶ Cycle
- ▶ Trends
- ▶ **Seasonality**
- ▶ Average

Ref: Long term capacity decisions relate to overall level of capacity while short term capacity decisions refer to seasonal, random or irregular variations in demand. (Handouts Page No. 76)

Question No: 26 (Marks: 1) - Please choose one

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Which relationship exists between the robustness of a product and the probability of failure?

- ▶ Positive relation
- ▶ Direct relation
- ▶ **Inverse relation**
- ▶ Negative relation

Ref by Instructor: When the probability of failure is high then it means that there are flaws in the product design or in manufacturing which may affect the product negatively and can lead to its failure and this case the robustness which is the strength or the healthiness of the product will be low. **For the high robustness of the product the probability of failure must be low and the extent to which the relationship is Inverse depends upon the rate of the probability of failure.** For example if a product has 80% probability of functioning then the probability why would it fail will be of 20% and this is due to this inverse relationship.

Question No: 27 (Marks: 1) - Please choose one

Which one of the following management functions is based on forecasting?

- ▶ **Planning**
- ▶ Organizing
- ▶ Leading
- ▶ Controlling

Ref: Forecasting is used in the practice of Customer Demand Planning in every day business forecasting for manufacturing companies.

<http://en.wikipedia.org/wiki/Forecasting>

Question No: 28 (Marks: 1) - Please choose one

Which one of the following factors provides a basis for comparing alternative forecasting techniques?

- ▶ Time dimension
- ▶ Reliability factor
- ▶ **Degree of accuracy**
- ▶ Measuring units

Ref: Accuracy: Forecasts should be accurate. In fact it should carry the degree of accuracy, so the users are aware of the limitations of the forecast. This will also help the end users to plan for possible errors and provide a basis for comparing the forecast with other alternative forecasts **(Handouts Page No. 34)**

Question No: 29 (Marks: 1) - Please choose one

Which of the following functions of an organization consists of all activities directly related to production of a good or service?

- ▶ **Operations**

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- ▶ Marketing
- ▶ Accounting
- ▶ Finance

Ref: The Operations function consists of all activities that are directly related to production of a good or service. (Handouts Page No. 7)

Question No: 30 (Marks: 1) - Please choose one

Which of following statement is **true** about effective capacity?

- ▶ It is the actual output achieved
- ▶ It is always less than actual output
- ▶ It is the maximum output that a firm can produce.
- ▶ **It is always less than designed capacity**

Ref:

http://books.google.com.pk/books?id=wUHzc8JtZzUC&pg=PA249&dq=effective+capacity+It+is+the+actual+output+achieved&hl=en&ei=4WV3TfycOIio8AP885jPCw&sa=X&oi=book_result&ct=result&resnum=1&sqi=2&ved=0CCcQ6AEwAA#v=onepage&q=effective%20capacity%20It%20is%20the%20actual%20output%20achieved&f=false

(Read the 3rd Paragraph)

Question No: 31 (Marks: 1) - Please choose one

In which one of the following decision environments it is impossible to assess the likelihood of various future events?

- ▶ Risk
- ▶ Bounded rationality
- ▶ Certainty
- ▶ **Uncertainty**

Ref: Uncertainty: environments it is impossible to assess the likelihood of various future events. <http://nrmt.files.wordpress.com/2011/04/15-decision-making-strategies.pdf>

Question No: 32 (Marks: 1) - Please choose one

Which of the following is **NOT** mark of a good layout in manufacturing?

- ▶ **Bottleneck operations**
- ▶ Straight line flow pattern (or adaption)
- ▶ Work stations close together
- ▶ Open plant floors (high visibility)

Ref: http://forecast.umkc.edu/ftppub/ba547/chapter_10.htm (SEE THE QUESTION NO. 01)

Question No: 33 (Marks: 1) - Please choose one

All of the following are examples of time based strategies **EXCEPT**:

- ▶ Products /service design time
- ▶ Processing time
- ▶ Response time for complaints

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► **Response time for innovation**

Ref: There are 6 time based strategies namely:-

13. **Planning Time:** The time required to react to a competitive threat, or to adopt new technologies, or to approve changes to an existing facility
14. **Products/Service Design Time:** The time needed to develop or market new or redesigned products or services
15. **Processing Time:** The time required to produce goods or services, includes repairing equipment, quality training, inventory etc
16. **Changeover Time:** is the time needed to change from producing one type of product or service to another. New model, new insurance /health service.
17. **Delivery Time:** is the time needed to fill orders.
18. **Response Time for complaints:** is the required to improve the model or service features according to customer inputs and improving employee working conditions. **(HANDOUTS PAGE NO. 18)**

Question No: 34 (Marks: 1) - Please choose one
Which one of the following is a key benefit of process plant strategy?

- **Economies of scale**
- Diseconomies of scale
- Product variety
- Task specialization

Ref:

http://books.google.com/books?id=tqVIT0xE4NAC&pg=PA369&dq=key+benefit+of+process+plant+strategy&hl=en&ei=cjd1TaX5LIfNrQeo39DRCg&sa=X&oi=book_result&ct=result&resnum=2&ved=0CDIQ6AEwAQ#v=onepage&q=key%20benefit%20of%20process%20plant%20strategy&f=false **(READ THE SECOND PARAGRAPH)**

Question No: 35 (Marks: 1) - Please choose one
Which one of the following refers to a design that takes into account organization's operational capabilities, when designing a product?

- Design for assembly
- **Design for manufacturing**
- Design for recycling
- Design for disassembly

Ref: Design for Manufacturing (DFM): The designers' consideration of the organization's manufacturing capabilities when designing a product. **(Handouts Page No. 51)**

Question No: 36 (Marks: 1) - Please choose one
Which of the following layouts facilitates the handling of varied processing requirements?

- Product layout
- **Process layout**

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- ▶ Fixed-position layout
- ▶ Hybrid/Combination layout

Ref: Process layout. A Layout that can handle varied processing requirements.
(Handouts Page No. 80)

Question No: 37 (Marks: 1) - Please choose one

Which one of the following forecasting techniques uses explanatory variables to predict future demand?

- ▶ **Associative forecast**
- ▶ Time series forecast
- ▶ Consumer survey
- ▶ Executive opinion

Ref: Associative Models: forecasting technique that uses explanatory variables to predict future demand. <http://cramberry.net/sets/26728-operational-management-3>

Question No: 38 (Marks: 1) - Please choose one

Which one of the following layout types is associated with car assembly?

- ▶ Fixed position layout
- ▶ Process layout
- ▶ **Product layout**
- ▶ Hybrid layout

Ref: Product – Layout should suit to the nature of product and its method of production. I.e. aircraft manufacturing and car manufacturing layouts will be different. Sales also affect the layout. <http://www.scribd.com/doc/7369836/Facility-Layout>

Question No: 39 (Marks: 1) - Please choose one

Which one of the following is an outcome of MINIMAX regret?

- ▶ The best of the worst possible payoff
- ▶ The best possible payoff
- ▶ The best average payoff
- ▶ **The least of the worst regret**

Ref: Minimax Regret: Determines the worst regret for each alternative **(Handouts Page No. 27)**

Question No: 40 (Marks: 1) - Please choose one

Which one of the following is an index used to measure actual output relative to design capacity?

- ▶ Efficiency
- ▶ Effective capacity
- ▶ Effectiveness
- ▶ **Utilization**

Ref: It can be expressed as a ratio, where utilization = actual output divided by design capacity. This measure is used in both capacity planning and capacity requirements

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planning processes. <http://www.bnet.com/topics/capacity+utilization>

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