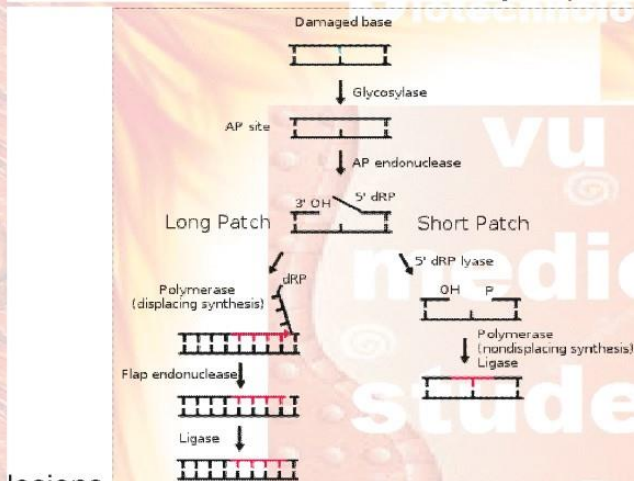


Bio302

1) define base excision repair?

In biochemistry and genetics, **base excision repair** (BER) is a cellular mechanism that repairs damaged DNA throughout the cell cycle. It is responsible primarily for removing small, non-helix-distorting **base** lesions from the genome. The related **nucleotide excision repair** pathway repairs bulky helix-distorting



lesions.

2) What are uv types and effects?

The shorter the wavelength, the more harmful the **UV** radiation. However, shorter wavelength **UV** radiation is less able to penetrate the skin. Short-wavelength UVC is the most **damaging type** of **UV** radiation. ... It can penetrate into the deeper layers of the skin and is responsible for the immediate tanning **effect**.

3) What are types of basic amino acids, name any five?

Amino Acids with Hydrophobic Side Chain – Aliphatic

Alanine, Ala, A. Isoleucine, Ile, I. ...

Valine, Val, V.

Phenylalanine, Phe, F. Tryptophan, Trp, W. ...

Asparagine, Asn, N. Cysteine, Cys, C. ...

Threonine, Thr, T.

Aspartic acid, Asp, D. Glutamic acid, Glu, E.

Arginine, Arg, R. Histidine, His, H. ...

Glycine, Gly, G. Proline, Pro, P.

4) what is the effect of 2,4 photoproduct on cell function

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5) What is central dogma?

The **central dogma** of molecular biology describes the two-step process, transcription and translation, by which the information in genes flows into proteins: DNA → RNA → protein. Transcription is the synthesis of an RNA copy of a segment of DNA.

6) what is core enzyme of bacteria write three name?

A **core enzyme** consists of the subunits of an **enzyme** that are needed for catalytic activity, as in the **core enzyme** RNA polymerase. An example of a **core enzyme** is a RNA polymerase **enzyme** without the sigma factor (σ).

7) what is base excision repair system write it in detail?

In biochemistry and genetics, **base excision repair** (BER) is a cellular mechanism that **repairs** damaged **DNA** throughout the cell cycle. It is responsible primarily for removing small, non-helix-distorting **base** lesions from the genome. The related **nucleotide excision repair** pathway **repairs** bulky helix-distorting lesions.

In nucleotide **excision repair** (NER), damaged bases are cut out within a string of nucleotides, and replaced with DNA as directed by the undamaged template strand. This **repair** system is used to remove pyrimidine dimers formed by UV radiation as well as nucleotides modified by bulky chemical adducts.

8) what is meant by suffix ase write name of ases.?

The **suffix -ase** is used in biochemistry to form names of enzymes. The most common way to name enzymes is to add this **suffix** onto the end of the substrate, e.g. an enzyme that breaks down peroxides may be called peroxidase; the enzyme that produces telomeres is called telomerase.

phosphatase.

catchphrase.

transferase.

plagioclase.

collagenase.

exonuclease.

carboxylase.

dipeptidase.

9) What is BER enzyme write function of three BER enzyme.

In biochemistry and genetics, **base excision repair** (BER) is a cellular mechanism that repairs damaged DNA throughout the cell cycle. It is responsible primarily for removing small, non-helix-distorting base lesions from the genome. The related nucleotide excision repair pathway repairs bulky helix-distorting lesions. AP endonucleases End processing enzymes DNA polymerases Flap endonuclease DNA ligase

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10) What is Replication fork?

Replication Fork. During DNA * **replication** a DNA double helix must unwind and separate so that DNA polymerase enzymes can use each single strand as a template for the synthesis of a new double strand. Strand separation is catalyzed by a Helicase * enzyme.

11) Methylation of N-3 in adenine and its how it important for treatment of cancer?

12) Write any three function of any enzyme.?

An **enzyme** is a protein molecule that is a biological catalyst with **three** characteristics. First, **the** basic **function** of an **enzyme** is to increase **the** rate of **a** reaction. Most cellular reactions occur about **a** million times faster than they would in **the** absence of an **enzyme**.

13) Define S & R form of bacteria colonies?

A **bacterial colony** is formed by a single **bacterial** cell that divides by binary fission to **form** thousands of clones. ... **R colonies** are formed by **bacteria** that are usually avirulent. The ability to show variations in both smooth-rough (**S-R**) ways and from rough to smooth (**R-S**) **colonies** has also been observed in **bacteria**.

14) Define Cpd?

CPD stands for **Continuing Professional Development**. It refers to the process of tracking and documenting the skills, knowledge and experience that you gain both formally and informally as you work, beyond any initial training. It's a record of what you experience, learn and then apply.

15) What are Characteristics of genetic material?

It must be stable. It must be capable of being expressed when needed. It must be capable of accurate replication. It must be transmitted from parent to progeny without change. **Sex-Linked Recessive Traits.** **Sex chromosomes** define the physiological **gender** of humans. Women have two X chromosomes, and men have an X and a **Y chromosome**. Some **phenotypic characteristics**, or **traits**, are due to genes that are only located on the X or the **Y chromosome** -- they are called **sex-linked traits**.

16) Write the structure of influenza virus.

Structurally, the influenza virus is **spherical** in shape. It is covered in an envelope made of a lipid bilayer with spikes of glycoproteins called haemagglutinin and neuraminidase. These proteins enable the virus to effectively bind with a host cell.

17) what is decantation?

Decantation is a process to separate mixtures by removing a liquid layer that is free of a precipitate. The purpose may be to obtain a decant (liquid free from particulates) or to recover the precipitate.

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18)What are types of cross linkages of alkylating agent?

Nitrogen mustards. Cyclophosphamide — the most widely used alkylating agent of modern times. Chloromethine also known as mechlorethamine or mustine (HN2) — the first alkylating agent to receive regulatory approval. ... Nitrosoureas. Carmustine. Lomustine. .. Alkyl sulfonates. Busulfan

19)What are three important discoveries in genetics?

1. Rules of Heredity (1850s)\

2. Genes Are Located on Chromosomes (1910 – 1920s)

3. Genes Control Biochemical Events (1930)

4. DNA Is the Genetic Material (1928, 1944, 1952)

20)What are Franklin and Wilkin contributions?

Concept 19 The DNA molecule is shaped like a twisted ladder. **James Watson** and Francis Crick solved the structure of DNA. Other scientists, like **Rosalind Franklin** and Maurice Wilkins, also contributed to this discovery.

21)how psoralen activate?

Psoralens can also be **activated** by irradiation with long wavelength UV light. While UVA range light is the clinical standard,

22)How many diferent types of UV radiation effect on the earth and the life?

The most common form of UV radiation is sunlight, which produces **three** main types of UV rays: UVA. UVB.UVC.

These **effects** include mainly sunburn (or erythema) and tanning (or pigment darkening). The chronic **effects of UV** exposure can be much more serious, even life threatening, and include premature aging of the skin, suppression of the immune system, damage to the eyes, and skin cancer.

This means that more **ultraviolet radiation** can pass through the atmosphere to the **Earth's surface**, particularly at the poles and nearby regions during certain times of the year. Without the layer of ozone in the stratosphere to protect us from excessive amounts of **UV-B radiation**, life as we know it would not exist.

23)What is telomerase, berief its functions?

the enzyme in a eukaryote that repairs the telomeres of the chromosomes so that they do not become progressively shorter during successive rounds of chromosome replication.

Telomerase: **structure**, functions, and activity regulation. Telomerase is the enzyme responsible for maintenance of the length of telomeres by addition of guanine-rich repetitive sequences. Telomerase activity is exhibited in gametes and **stem** and tumor cells.

24)Write 3 Developments in the field of Genetics

25)Eslist any 3 way in which PAHs are formed?

Polycyclic aromatic hydrocarbons are primarily found in natural sources such as creosote. They can result from the incomplete combustion of organic

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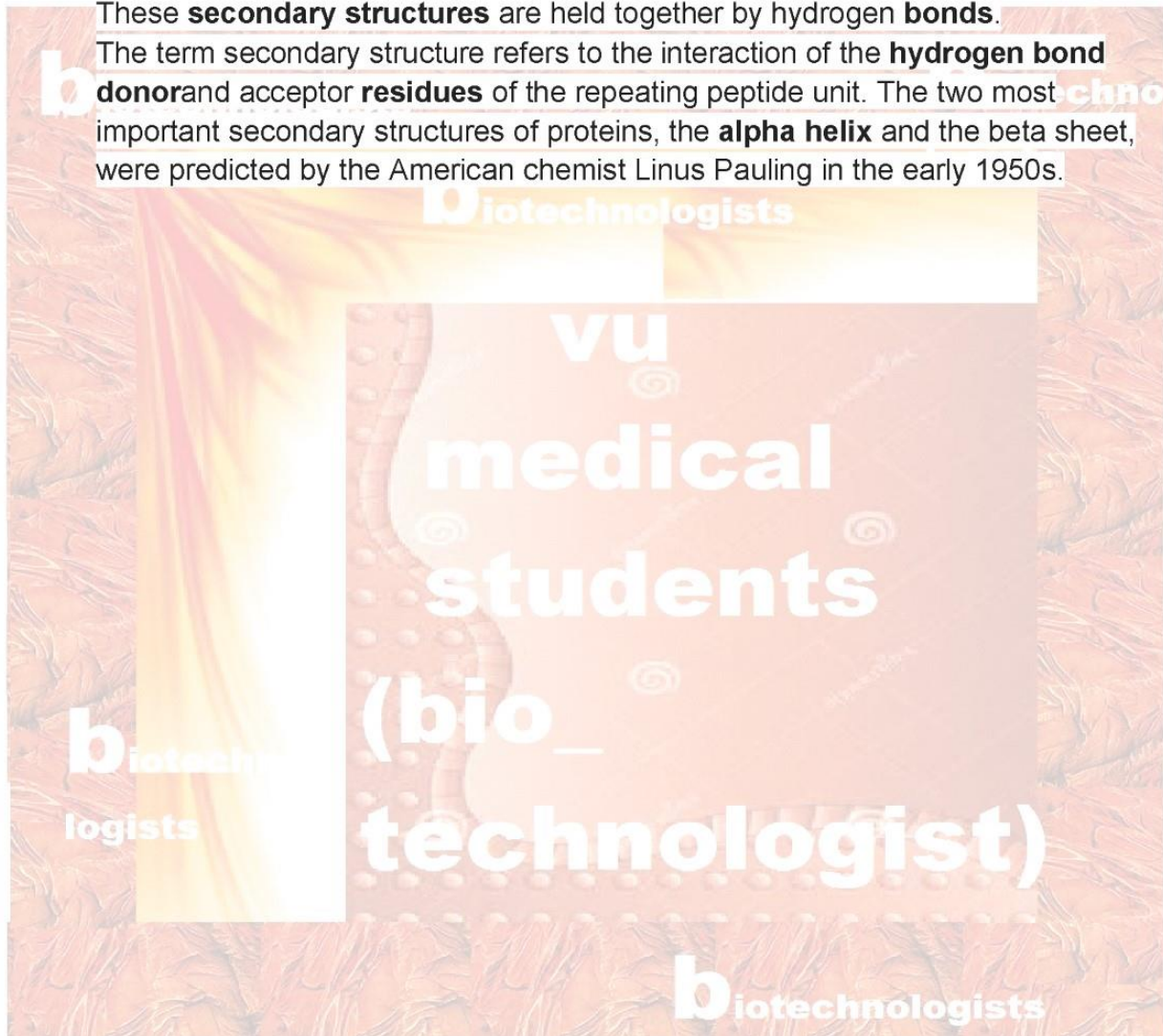
matter. **PAHs** can also be produced geologically when organic sediments are chemically transformed into fossil fuels such as oil and coal.

26) How many Local conformational secondary proteins join to form a protein molecule?

Within the long **protein** chains **there** are regions in which the chains are organised into regular **structures** known as alpha-helices (alpha-helices) and beta-pleated sheets. These are the **secondary structures** in **proteins**.

These **secondary structures** are held together by hydrogen **bonds**.

The term secondary structure refers to the interaction of the **hydrogen bond donor** and acceptor **residues** of the repeating peptide unit. The two most important secondary structures of proteins, the **alpha helix** and the beta sheet, were predicted by the American chemist Linus Pauling in the early 1950s.



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