CBSE Class 11 Biology

Sample Paper 03 (2020-21)

Maximum Marks: 70

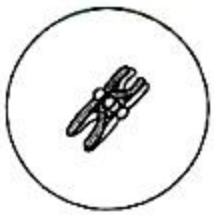
Time Allowed: 3 hours

General Instructions:

i. All questions are compulsory.
ii. The question paper has four sections: Section A, Section B, Section C and Section D. There are 33 questions in the question paper.
iii. Section–A has 14 questions of 1 mark each and 02 case-based questions. Section–B has 9 questions of 2 marks each. Section–C has 5 questions of 3 marks each and Section–D has 3 questions of 5 marks each.
iv. There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
v. Wherever necessary, neat and properly labeled diagrams should be drawn.

Section A

1. Linnaeus is considered as Father of Taxonomy. Name two other botanists known for their contribution to the field of plant taxonomy?
2. Plasma protein acts as acid-base buffers in the blood. Explain.
3. Which group of plants shows micorrhiza?
4. Why are skeletal muscles also known as striated muscles?
5. Why are cucurbits referred to as monoecious?
6. What is the function of simple epithelium?
7. The diagram shows a bivalent at prophase-I of meiosis. Which of the four chromatids can cross over?



8. Explain the term "Energy Currency". Which substance acts as energy currency in plants

and animals?

9. Which hormone is responsible for the maintenance of the diurnal rhythm of our body? Mention its source.
10. What is the excretory product from the kidney of reptiles?
11. **Assertion :** Rhizopus and Mucor are used in the liquor industry.
    Reason : They are used for fermentation.
    a. Assertion and reason both are correct statements and reason is correct explanation for assertion.
    b. Assertion and reason both are correct statements but reason is not correct explanation for assertion.
    c. Assertion is correct statement but reason is wrong statement.
    d. Assertion is wrong statement but reason is correct statement.

OR

Assertion : Attack of TMV on tobacco is not economically significant.
Reason : Tobacco alkaloid nicotine is highly concentrated in its root.
    a. Assertion and reason both are correct statements and reason is correct explanation for assertion.
    b. Assertion and reason both are correct statements but reason is not correct explanation for assertion.
    c. Assertion is correct statement but reason is wrong statement.
    d. Assertion is wrong statement but reason is correct statement.
12. **Assertion:** Enzymes lower down the activation energy of the reactant molecule to make its transition into product easier.
    Reason: Enzymes are highly substrate specific catalysts.
    a. Assertion and reason both are correct statements and reason is correct explanation for assertion.
    b. Assertion and reason both are correct statements but reason is not correct explanation for assertion.
    c. Assertion is correct statement but reason is wrong statement.
    d. Assertion is wrong statement but reason is correct statement.
13. **Assertion:** Cell is the fundamental structural and functional unit of all living organisms.
    Reason: Anything less than a complete structure of a cell does not ensure independent

living.

a. Assertion and reason both are correct statements and reason is correct explanation for assertion.
b. Assertion and reason both are correct statements but reason is not correct explanation for assertion.
c. Assertion is correct statement but reason is wrong statement.
d. Assertion is wrong statement but reason is correct statement.

14. **Assertion:** The nasal chamber opens into nasopharynx, which is a portion of phaiynx.
Reason: Nasopharynx opens through the gullet of the larynx region into the trachea.
    a. Assertion and reason both are correct statements and reason is correct explanation for assertion.
    b. Assertion and reason both are correct statements but reason is not correct explanation for assertion.
    c. Assertion is correct statement but reason is wrong statement.
    d. Assertion is wrong statement but reason is correct statement.
15. **Read the following and answer any four questions:**
The detailed structure of the membrane was studied only after the advent of the electron microscope in the 1950s. Meanwhile, chemical studies on the cell membrane, especially in human red blood cells (RBCs), enabled the scientists to deduce the possible structure of the plasma membrane. These studies showed that the cell membrane is composed of lipids, proteins and carbohydrates.
    i. Which component of the plasma membrane is arranged as a bilayer?
        a. Nucleic acid
        b. Lipid
        c. Protein
        d. Carbohydrate
    ii. The lipid component of the membrane mainly consists of _____.
        a. Phosphoglycerides
        b. Amino
        c. acids
        d. Glycoproteins
    iii. What percentage of the membrane of human erythrocytes consists of proteins?
        a. 40

b. 70
c. 52
d. 66

iv. Depending on the ease of extraction, membrane proteins can be of _____ types.
a. Three
b. Two
c. Four
d. Five

v. **Assertion:** The plasma membrane is selectively permeable to some molecules present on either side of it.
Reason: Neutral solutes may move across the membrane by the process of simple diffusion.
a. Both assertion and reason are true, and reason is the correct explanation of the assertion.
b. Both assertion and reason are true, and reason is not the correct explanation of the assertion.
c. Assertion is true but reason is false.
d. Both assertion and reason are false.

16. **Read the following and answer any four questions:**
The respiratory system in human beings constitutes the following organs -nose, nasal passage, trachea, bronchi, lungs and diaphragm. Human beings have a pair of external nostrils opening out above the upper lips which leads to a nasal chamber through the nasal passage. During the breathing cycle, when air is taken in and let out, the lungs always contain a residual volume of air so that there is sufficient time for oxygen to be absorbed and for the carbon dioxide to be released.

i. The nasal chamber opens into _____, which is a portion of the pharynx.
a. Glottis
b. Epiglottis
c. Nasopharynx
d. Bronchioles

ii. _____ is a cartilaginous box which helps in sound production.
a. Larynx
b. Trachea

c. Pleura
d. Glottis

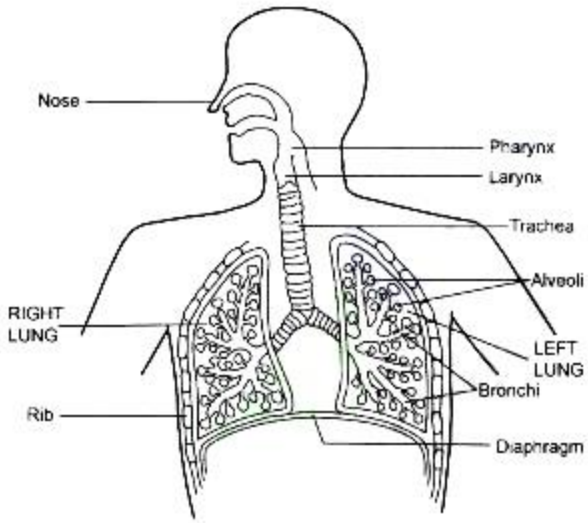
iii. During swallowing, glottis can be covered by a thin elastic cartilaginous flap called _____.

a. Pleura
b. Epiglottis
c. Trachea
d. Alveoli

iv. The lungs are covered by a double-layered membrane called _____.

a. Trachea
b. Bronchioles
c. Epiglottis
d. Pleura

v. The following statements are drawn as conclusions for the image shown.



I. Each bronchi undergoes repeated divisions to form the secondary and tertiary bronchi.
II. The branching network of bronchi, bronchioles and alveoli comprise the lungs.
III. The outer pleural membrane is in close contact with the lung surface.
IV. The part starting with the external nostrils up to the terminal bronchioles constitute the respiratory or exchange part of the respiratory system.

Choose from below the correct alternative.

a. Only I is true
b. I and II are true

c. III and IV are true

d. I and III are true

Section B

17. What will the value of RQ when organic acids are used as respiratory substrate?
18. Many discoveries in science have been accidental. This is true for plant hormones also. Can you justify this statement by giving an example? Also what term is used for such accidental findings?
19. Compare the Central neural system (CNS) and Peripheral neural system (PNS)
20. Write any two energy yielding reactions of glycolysis.

OR

When will be the value of RQ will be less than 1?

21. Mention any two reasons, which prove that photosynthesis is essential for sustaining life on the earth.
22. Does moonlight support photosynthesis? Find out.

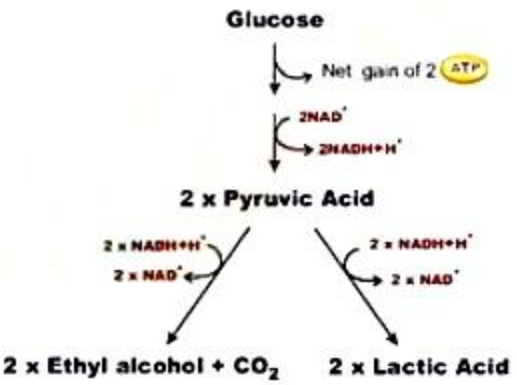
OR

A type of anatomy of leaves possessed by C_4-plants is different from those of C_3-plants. Explain.

23. Describe in brief, structure of androecium.
24. Write short notes on the functions of the following hormones. Insulin and glucagon
25. Why mammals are considered more intelligent as compared to other animals?

Section C

26.



With reference to the above schematic representation of anaerobic respiration answer the following questions:

i. Name the process which gives out CO_2.

ii. Mention the enzymes involved in the formation of ethyl alcohol and lactic acid. What these processes called?

27. Represent all types of placentation diagrammatically only.
28. Where do PGA and glycine gain entry respectively after being formed during photorespiration in plants? What happens to them immediately after?
29. Describe telophase I of meiosis.
30. Describe the various salient features of Protista.

OR

Why the members of class-Deuteromycetes are considered the fungi imperfecti?

Section D

31. Describe phylum Coelenterata. Give suitable examples.

OR

Describe economic importance of the largest phylum.

32. Illustrate a glycosidic, peptide and a phosphodiester bond.

OR

What are factors which affect action of enzyme? What is lock and key model and induced fit model in respect of enzyme action?

33. Describe circulatory pathways in animals.

OR

Distinguish between Arteriosclerosis and Atherosclerosis.

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Solution

Section A

1. G. Bentham and Joseph Dalton Hooker. Both are famous for their work on the classification of plants based on natural characteristics.
2. Plasma protein maintains the pH of the blood by neutralising the strong acids and bases, so it acts as acid-base buffers.
3. Gymnosperms.
4. Skeletal muscle is also called striated muscle, because when it is viewed under polarised light or stained with an indicator, we can see alternating stripes of light and dark.
5. Male and female flowers are borne on the same plant that is why cucurbits referred to as monoecious.
6. Simple epithelium facilitates diffusion , absorption and secretion .
7. The non-sister chromatids of homologous pair of chromosomes undergo crossing over in pachytene stage of meiosis.
8. The energy released is stored in the form of ATP in chemical bonds. It is broken and utilized when required. Hence, ATP is the energy currency in plants as well as in animals.
9. The hormone responsible for the diurnal rhythm of our body is melatonin. The source of its secretion is the pineal gland.
10. Uric acid is the excretory product from the kidney of reptiles.
11. (b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.

    Explanation: Both Rhizopus and Mucor species are used in alcoholic fermentation and produce a number of organic acids like citric acid, lactic acid, etc.

OR

(c) Assertion is correct statement but reason is wrong statement.

Explanation: In plants, the attack of TMV causes symptoms such as mosaic formation, leaf rolling and curling, yellowing and vein clearing, dwarfing and stunted growth. Tobacco alkaloid nicotine is highly concentrated in the leaves of tobacco plants infected

by TMV.

12. (b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.
    Explanation: Assertion and Reason both are true but Reason is not the correct explanation of Assertion.
13. (a) Assertion and reason both are correct statements and reason is correct explanation for assertion.
    Explanation: Assertion and reason both are correct statements and reason is correct explanation for assertion.
14. (c) Assertion is correct statement but reason is wrong statement.
    Explanation: Assertion is correct statement but reason is wrong statement.
15. i. (b) The lipids are arranged in a bilayer in the plasma membrane with the polar head towards the outer sides and the hydrophobic tails towards the inner part.
    ii. (a) The lipid component of the membrane mainly consists of phosphoglycerides.
    iii. (c) In human beings, the membrane of the erythrocyte has approximately 52 percent protein and 40 percent lipids.
    iv. (b) Depending on the ease of extraction, membrane proteins can be classified into two types - integral or peripheral.
    v. (b) The plasma membrane is selectively permeable to some molecules present on either side of it. Neutral solutes may move across the membrane by the process of simple diffusion along the concentration gradient, i.e., from higher concentration to the lower. Hence, both assertion and reason are true, but reason is not the correct explanation of the assertion.
16. i. (c) The nasal chamber opens into the nasopharynx, which is a portion of the pharynx, the common passage for food and air.
    ii. (a) Larynx is a cartilaginous box which helps in sound production and hence called the sound box.
    iii. (b) During swallowing glottis can be covered by a thin elastic cartilaginous flap called epiglottis to prevent the entry of food into the larynx.
    iv. (d) The two lungs are covered by a double-layered membrane called pleura, filled with pleural fluid.
    v. (b) Each bronchi undergoes repeated divisions to form the secondary and tertiary bronchi and bronchioles ending up in very thin terminal bronchioles. The branching

network of bronchi, bronchioles and alveoli comprise the lungs. The outer pleural membrane is in close contact with the thoracic lining whereas the inner pleural membrane is in contact with the lung surface. The part starting with the external nostrils up to the terminal bronchioles constitute the conducting part whereas the alveoli and their ducts form the respiratory or exchange part of the respiratory system.

Section B

17. **Organic acids** contain more oxygen than carbohydrates; therefore the RQ is more than one. Less amount of oxygen is required for their oxidation.

    $2\,(COOH) + O_2 \rightarrow 4CO_2 + 2H_2O$ + Energy.

    $RQ = \frac{4CO_2}{1O_2} = 4$

18. This is true that all the five plant hormones have been discovered accidentally. For example; auxin was accidentally discovered by Charles Darwin and his son Francis Darwin. They observed that coleoptiles of canary grass responded to unilateral illumination by growing towards the source of light. Auxin was later isolated from coleoptiles of oat seedlings F.W. Went.

    The term used for accidental discovery is 'serendipity'.

19. **Central Neural System and Peripheral Neural System.** The CNS includes the brain and the spinal cord and is the site of information processing and control. The PNS comprises of all the nerves of the body associated with the CNS (brain and spinal cord).

20. Two energy-yielding reactions of glycolysis are:

    i. Conversion of BPGA (biphosphoglyceric acid) to PGA (phosphoglyceric acid) where energy is trapped by the formation of ATP.

    ii. Conversion of PEP to Pyruvic acid (phosphoenolpyruvate).

    OR

    The value of R.Q. will be less than 1, if the fats are used in respiration.

    $\underset{\text{Tripalmitin}}{2\,(C_{51}H_{98}O_6)} + 145O_2 \rightarrow 102CO2 + 98H2O$ + energy

    $R.Q. = \frac{102CO_2}{145O_2} = 0.7$

21. Two reasons are as follows:

    i. It is the process by which food is manufactured for all living organisms.

ii. It is the only natural process by which oxygen is liberated into the atmosphere. This O_2 is used by all living organisms respiring aerobically.

22. The intensity of moonlight is several thousands times less than that of direct sunlight, insufficient for the light-dependent phase of photosynthesis. So photosynthesis does not occur in the moonlight.

OR

C_4 -plants possess special anatomy of leaves called Kranz anatomy, which means the presence of two types of chloroplasts, agranal in bundle sheath cells and granal in mesophyll cells.

23. Androecium is composed of stamens. Each stamen which represents the male reproductive organ consists of a stalk or a filament and an anther. Each anther is usually bilobed and each lobe has two chambers, the pollen sacs. The pollen grains are produced in pollen sacs.
24. **Insulin** helps control blood glucose levels by signaling the liver and muscle and fat cells to take in glucose from the blood. Insulin therefore helps cells to take in glucose to be used for energy. If the body has sufficient energy, insulin signals the liver to take up glucose and store it as glycogen.
    The pancreas releases glucagon when the concentration of glucose in the bloodstream falls too low. Glucagon causes the liver to convert stored glycogen into glucose, which is released into the bloodstream. High blood-glucose levels, on the other hand, stimulate the release of insulin
25. In mammals, the brain is well-developed with large sized cerebrum, four optic lobes and a nervous band called the corpus callosum. Grey matter is more developed which makes them more intelligent among all other animals.

Section C

26. i. Alcohol fermentation releases CO_2.

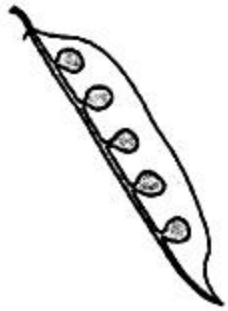
    ii. The process of ethyl alcohol and lactic acid formation is called alcoholic fermentation and lactic acid fermentation.

    - **Alcoholic fermentation** uses two enzymes that are **Pyruvate decarboxylase** which converts pyruvic acid into acetaldehyde and **alcohol dehydrogenase** which converts acetaldehyde into alcohol.
    - **Lactic acid fermentation** uses **lactic acid dehydrogenase** which converts one

molecule of glucose into two molecules of lactic acid.

27. The different types of placentation can be shown diagrammatically as follows:

i. **Marginal**



ii. **Axile**

iii. **Parietal**

iv. **Free central**

v. **Basal**

28. The PGA enters Calvin cycles and so app. 75% of carbon lost during oxygenation by RuBP is recovered but 25% is lost as one mole of CO_2 is released. Glycine enters mitochondria and 2 glycine molecules give rise to serine and CO_2. The serine is picked up by peroxysomes and is converted into glycerate by a series of reactions. The glycine leaves the peroxisome and enters chloroplast, where it is phosphorylated to make PGA.
29. **Telophase I:**

    - The nuclear membrane and nucleolus reappear, cytokinesis follows and this is called as **diad** of cells.
    - Although in many cases the chromosomes do undergo some dispersion, they do not reach the extremely extended state of the interphase nucleus.
    - The stage between the two meiotic divisions is called **interkinesis** and is generally short lived. Interkinesis is followed by prophase II.
30. Salient Features of Protista :
    i. They are **single-celled** colonial, filamentous eukaryotes.
    ii. These grow in humid and moist **environments.**
    iii. Some are photosynthetic but some are non-photosynthetic.
    iv. Some forms are like animals whereas some are live plants.
    v. Have **membrane-bound cell organelles,**
    vi. Examples are **protozoa, slime moulds,** Euglenoids, Chrysophytes protistan algae such as diatoms, dinoflagellates or phytoplanktons, etc.
    vii. The protozoans are **unicellular (single-celled) heterotrophs.** Euglena is autotroph.
    viii. Their somatic body is called **plasmodium** (a cellular, multinucleate, mobile mass of protoplasm lacking the cell wall).

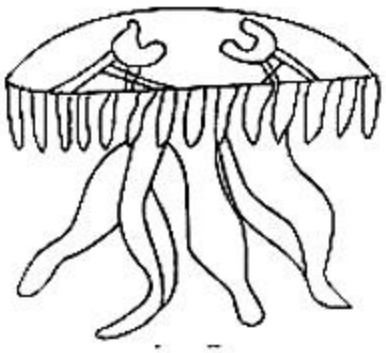
OR

Deuteromycetes is an artificial class of fungi which has been created to include all those fungi (fungi imperfecti) in which sexual stage is either absent or not known. Their

mycelium is usually septate. Coenocytic forms are not known. Clamp connections, typical of Basidiomycetes are absent. It is believed that most members of Deuteromycetes are actually Ascomycetes in which sexual reproduction is either absent or yet to be discovered.

Section D

31. **Phylum - Coelenterata (Cnidaria)**



Aurelia

i. **Habit and Habitat:** They are aquatic, mostly marine, sessile or free-swimming, radially symmetrical animals. The name cnidaria is derived from the cnidoblasts or cnidocytes (which contain the stinging capsules or nematocytes) present on the tentacles and the body. Cnidoblasts are used for anchorage, defence and for the capture of prey.

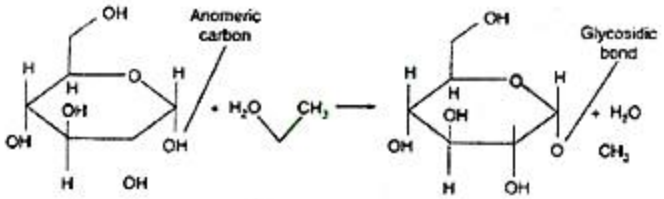
ii. **Key Structural Features:** Cnidarians exhibit tissue level of organisation and are diploblastic. They have a central gastro-vascular cavity with a single opening, hypostome. Digestion is extracellular and intracellular. Some of the cnidarians e.g., corals have a skeleton composed of calcium carbonate.
Basic Body Forms. Cnidarians exhibit two basic body forms called Polyp and Medusa. Polyp is a sessile and cylindrical form like Hydra, Adamsia, etc. whereas medussa is umbrella-shaped and free-swimming like Aurelia or jellyfish. Those cnidarians which exist in both forms exhibit alternation of generation (Metagenesis), i.e., polyps produce medusae asexually and medusae form the polyps sexually (e.g., Obelia).
Examples: Physalia (Portuguese man-of-war), Adamsia (sea anemone), Pennatula (Sea-pen), Gorgonia (Sea-fan) and Meandrina (Brain coral)

OR

The largest phylum is Arthropoda and its economic importance is as follows:

- They are major agents for cross pollination. Insects, like butterflies and honey bee facilitate cross pollination.
- Honey is an important food for human.
- Many crustaceans, like lobsters and prawns are part of cuisine around the world.
- The red dye cochineal, produced from a Central American species of insect, was economically important to the Aztecs and Mayans.
- The blood of horseshoe crabs contains a clotting agent Limulus Amebocyte Lysate which is now used to test that antibiotics and kidney machines are free of dangerous bacteria, and to detect spinal meningitis and some cancers.
- Maggots of housefly are used to treat those wounds which take time to heal because of absence of blood supply.
- The relative simplicity of the arthropods' body plan, allowing them to move on a variety of surfaces both on land and in water, have made them useful as models for robotics.
- They are carriers of many human parasite causing diseases like malaria, filaria and sleeping sickness.
- Cockroaches are one of the major nuisance as they contaminate food in kitchens.
- Termites are major causes of playing havoc with wooden furniture's.
- Scorpions are known for their deadly sting, which can kill human and livestock.

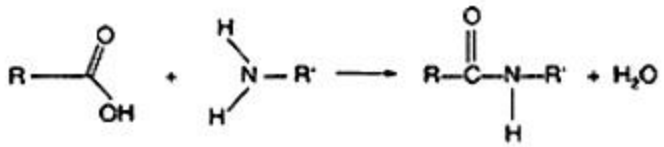
32. A glycosidic bond is a certain type of functional group that joins a carbohydrate (sugar) molecule to another group, which may or may not be another carbohydrate.



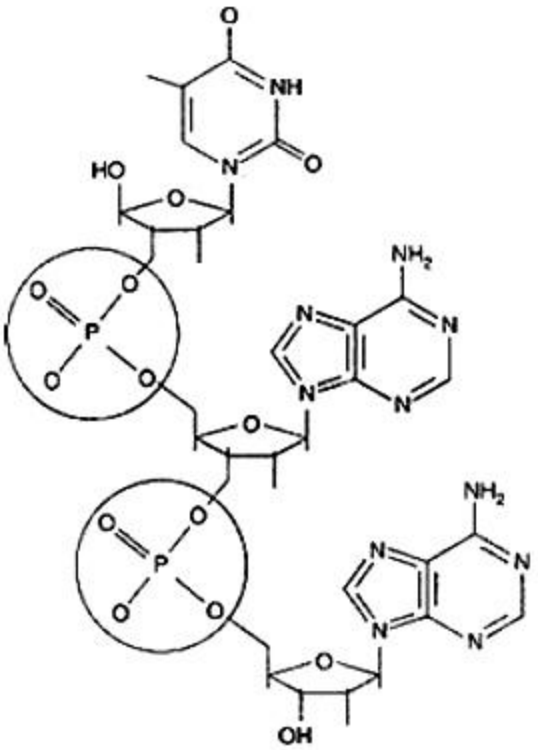
Glycosidic Bond

A peptide bond (amide bond) is a chemical bond formed between two molecules when the carboxyl group of one molecule reacts with the amine group of the other molecule, thereby releasing a molecule of water (H_2O). This is a dehydration synthesis reaction (also known as a condensation reaction), and usually occurs between amino acids. The resulting CO-NH bond is called a peptide bond, and the resulting molecule is an amide. The four-atom functional group -C(= O) NH- is called an amide group or (in the context of proteins) a peptide group. Polypeptides and proteins are chains of amino acids held together by peptide bonds, as is the backbone of PNA. Polyamides, such as nylons and

aramids, are synthetic molecules (polymers) that possess peptide bonds.



Peptide Bond



Phosphodiester Bond

A phosphodiester bond is a group of strong covalent bonds between a phosphate group and two other molecules over two ester bonds. Phosphodiester bonds are central to all life on Earth, as they make up the backbone of the strands of DNA. In DNA and RNA, the phosphodiester bond is the linkage between the 3' carbon atom of one sugar molecule and the 5' carbon of another, deoxyribose in DNA and ribose in RNA.

OR

Factors Affecting Enzymatic Action

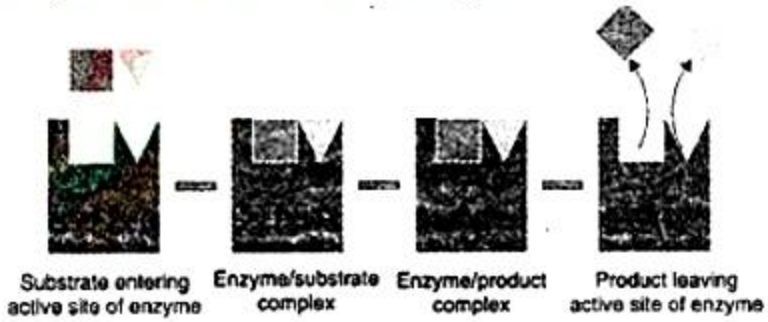
i. **Temperature and pH:** Enzymes generally function over a narrow range of temperature and pH. Each enzyme shows its highest activity at a particular temperature and pH called the optimum temperature and optimum pH. Activity declines both below and above the optimum value. Low temperature preserves the enzyme in a temporarily inactive state whereas high temperature destroys enzymatic

activity because proteins are denatured by heat.

ii. **Concentration of Substrate:** With the increase in substrate concentration, the velocity of the enzymatic reaction rises at first. The reaction ultimately reaches a maximum velocity (V max) which is not exceeded by any further rise in the concentration of the substrate. This is because the enzyme molecules are fewer than the substrate molecules and after saturation of these molecules, there are no free enzyme molecule to bind with the additional substrate molecules.

iii. **Effect of Inhibitor:** The activity of an enzyme is also sensitive to the presence of specific chemicals that bind to the enzyme. When the binding of the chemical shuts off enzyme activity, the process is called inhibition and the chemical is called an inhibitor. When the inhibitor closely resembles the substrate in its molecular structure and inhibits the activity of the enzyme, it is known as a competitive inhibitor. Due to its close structural similarity with the substrate, the inhibitor competes with the substrate for the substrate binding site of the enzyme. Consequently, the substrate cannot bind and as a result, the enzyme action declines, e.g., inhibition of succinic dehydrogenase by malonate which closely resembles the substrate succinate in structure. Such competitive inhibitors are often used in the control of bacterial pathogens.

iv. **"Lock and Key" Model:** The model was suggested by Emil Fischer in 1894 Both the enzyme and the substrate possess specific complementary geometric shapes that fit exactly into one another. This is often referred to as "the lock and key" model. However, while this model explains enzyme specificity, it fails to explain the stabilization of the transition state that enzymes achieve. The "lock and key" model has proven inaccurate, and the induced fit model is the most currently accepted enzyme-substrate-coenzyme figure.



Diagrams to show the induced fit hypothesis of enzyme action

v. **Induced fit Model:** In 1958, Daniel Koshland suggested a modification to the lock and

key model: since enzymes are rather flexible structures, the active site is continually reshaped by interactions with the substrate as the substrate interacts with the enzyme. As a result, the substrate does not simply bind to a rigid active site the amino acid side chains which make up the active site are moulded into the precise positions that enable the enzyme to perform its catalytic function. In some cases, such as glycosidases, the substrate molecule also changes shape slightly as it enters the active site. The active site continues to change until the substrate is completely bound, at which point the final shape and charge are determined.

33. The circulatory patterns are of two types - open or closed.

Open circulatory system. In open circulatory system blood pumped by the heart passes through large vessels into open spaces or body cavities called sinuses. Arthropodas and Molluscs have this type of circulatory system.

Closed Circulatory System . In closed circulatory system blood pumped by the heart is always circulated through a closed network of blood vessels. This pattern is considered to be more advantageous as the flow of fluid can be more precisely regulated. Annelids and chordates have this type of system.

Chambered Heart. All vertebrates possess a muscular chambered heart. Fishes have a 2-chambered heart with an atrium and a ventricle. Amphibians and the reptiles (except crocodiles) have a 3-chambered heart with two atria and a single ventricle, whereas crocodiles, birds and mammals possess a 4-chambered heart with two atria and two ventricles.

Single Circulation. In fishes the heart pumps out deoxygenated blood which is oxygenated by the gills and supplied to the body parts from where deoxygenated blood is returned to the heart.

Incomplete Double Circulation. In amphibians and reptiles, the left atrium receives oxygenated blood from the gills / lungs/ skin and the right atrium gets the deoxygenated blood from other body parts. However, they get mixed up in the single ventricle which pumps out mixed blood.

Complete Double Circulation. In birds and mammals, oxygenated and deoxygenated blood received by the left and right atria respectively passes on to the ventricles of the same sides. The ventricles pump it out without any mixing up, i.e., two separate circulatory pathways are present in these organisms, hence, these animals have double circulation.

OR

Atherosclerosis	Arteriosclerosis
Deposition of cholesterol on the walls of the lumen of arteries. The deposition is atheromatous or atherosclerotic plaque.	Hardening of arteries due to deposition and thickening. Calcium salts precipitate with the cholesterol of formed plaque.
The formation starts by deposition of minute crystals in tunica internal and the smooth muscles.	The calcification of plaque makes the arteries wall stiff and rigid. So it is called **hardening of arteries.**
The lumen of the artery is reduced. The blood flow is reduced in them.	The artery loses distension and its walls may rupture.
PDGF (Platelet-derived growth factor) is released.	The blood may leak and can block the blood pathway.
The plaques formed in the coronary artery decreases the blood supply to the heart. It may cause a heart attack (stroke).	The **thrombosis** in a coronary artery may cause a heart attack. It may cause even **death.**