

DAV BR PUBLIC SCHOOL, BINA
PRACTICE PAPER SESSION 2023-24

Class-XI

SUBJECT: BIOLOGY (044)

Time Allowed: : 3 hours

M M: 70

General Instructions:

- i. All questions are compulsory.
- ii. The question paper has five sections and 33 questions. All questions are compulsory.
- iii. Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E 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.

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1. Which one is less general in characteristic as compared to the genus?
 - a) Class
 - b) Division
 - c) Family
 - d) Species
 2. Which one of the following is also known as antidiuretic hormone?
 - a) Calcitonin
 - b) Adrenaline
 - c) Vasopressin
 - d) Oxytocin
 3. Which of the following is not a macromolecule?
 - a) DNA
 - b) Protein
 - c) Polysaccharide
 - d) Lipid
 4. Stomata is found in which tissue system?
 - a) Vascular tissue system
 - b) Stomatal tissue system
 - c) Epidermal tissue system
 - d) Ground tissue system
 5. Respiratory process is regulated by certain specialized centres in

the brain. One of the following centres can reduce the inspiratory duration upon stimulation:

- a) Medullary inspiratory centre
 - b) Apneustic centre
 - c) Chemosensitive centre
 - d) Pneumotaxic centre
6. Which of the following happens during the dark reaction?
- a) Trapping of light energy
 - b) Carbon fixation
 - c) Formation of PGA
 - d) Formation of ATP and NADPH
7. Which is the excretory product in eagles?
- a) Protein
 - b) Uric acid
 - c) Urea
 - d) Ammonia
8. Frog shows which kind of excretion?
- a) Ammonotelic in water and ureotelic on land
 - b) Ureotelic
 - c) Uricotelic
 - d) Ammonotelic
9. Higher plants possess specific areas that take part in the formation of _____ new cells. These areas are called _____.
- a) Permanent tissue
 - b) Meristems
 - c) Collenchyma
 - d) Parenchyma
10. The giant Redwood tree (*Sequoia sempervirens*) is a/an:
- a) Pteridophyte
 - b) Angiosperm
 - c) Free fern
 - d) Gymnosperm
11. Urea cycle operates in:
- a) Liver
 - b) Lungs
 - c) Skin cells
 - d) Sweat glands and sebaceous glands
12. Those bronchioles which divide into alveolar ducts are called as:
- a) Tertiary bronchioles
 - b) Secondary bronchioles
 - c) Primary bronchioles
 - d) Respiratory bronchioles
- 13. Assertion (A):** Microcyst of Myxamoebae lacks a cell wall.
Reason (R): Microcyst is formed in sexual reproduction of cellular slime moulds.

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- a) Both A and R are true and R is the correct explanation of A.
 - b) Both A and R are true but R is not the correct explanation of A.
 - c) A is true but R is false.
 - d) A is false but R is true.

14. Assertion (A): Aerobic animals are not truly aerobic.

Reason (R): They produce lactic acid anaerobically.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false.
- d) A is false but R is true.

15. Assertion (A): ATP is called universal energy carrier.

Reason (R): ATP is a nucleotide.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false.
- d) A is false but R is true.

16. Assertion (A): Respiratory gas exchange occurs through osmosis.

Reason (R): Respiratory gas goes from higher partial pressure region to the region of lower partial pressure.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false.
- d) A is false but R is true.

Section B

Answer the following questions in few sentences.

1. You are given two slides having T.S. of roots and stems. How will you identify which slide is of root and which is of stem?
2. Frogs are beneficial for mankind, justify the statement.
3. Which hormone helps maintain the bone density in the body?
4. Why there is a need to standardise the system of naming of living organisms?
5. $3\text{CO}_2 + 9\text{ATP} + 6\text{NADPH} + \text{Water} \rightarrow \rightarrow \text{glyceraldehyde 3-phosphate} + 9\text{ADP} + 6\text{NADP}^+ + 8\text{Pi}$
Analyze the above reaction and answer the following questions:
 - i. How many molecules of ATP & NADPH are required to fix one molecule of CO_2 ?
 - ii. Where in the chloroplast does this process occur?

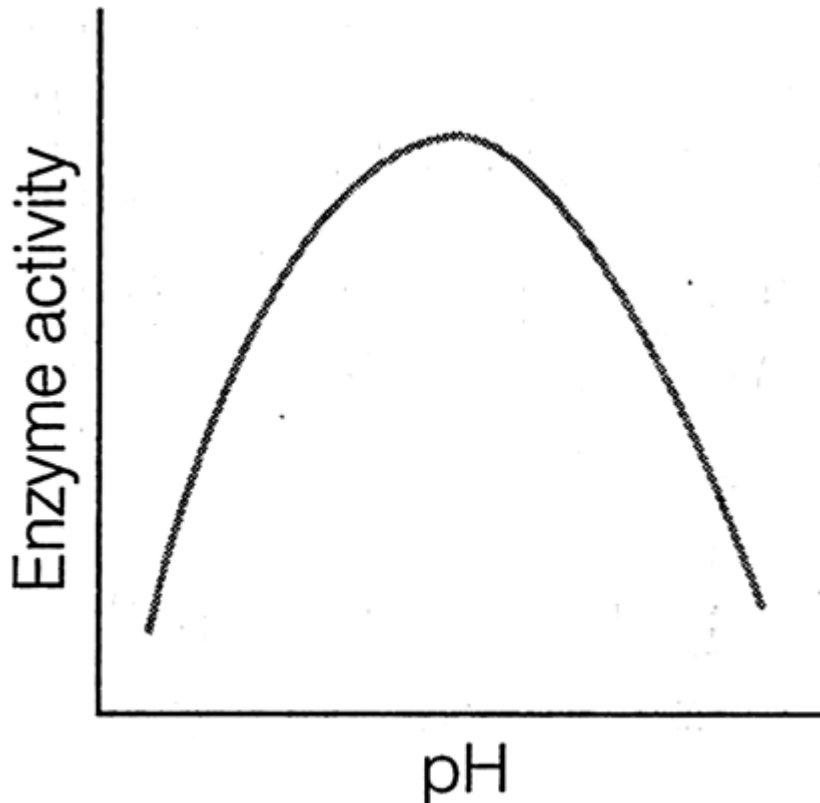
OR

Explain Kranze anatomy.

SECTION -C

Answer the following questions in brief.

1. What are the industrial uses of algae?
2. Differentiate between Exoskeleton and Endoskeleton:
3. Enzymes are proteins in which the amino acids are linked to each other by peptide bonds having many functional groups in their structure. As they are weak acids and bases in chemical nature, this ionization is influenced by the pH of the solution. For many enzymes, activity is influenced by the surrounding pH. This is depicted in the curve below, explain briefly.

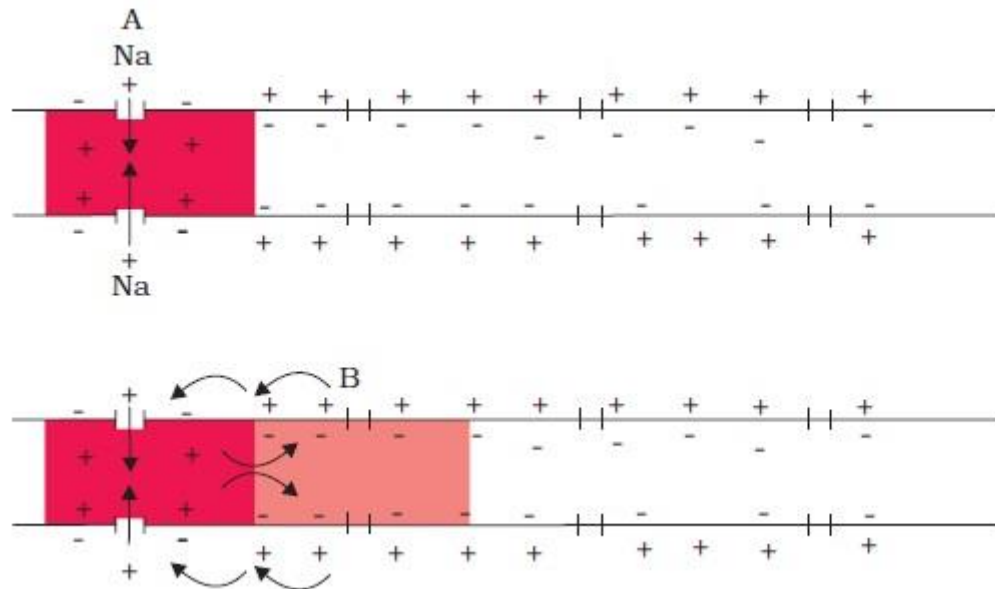


4. "The role of ethylene and abscisic acid is both positive and negative". Justify the statement.
5. Give a brief explanation of the human skeletal system.
6. Compare mitral valve and semilunar valve.

OR

Explain double circulation.

7. Examine the following diagram and answer the following questions:

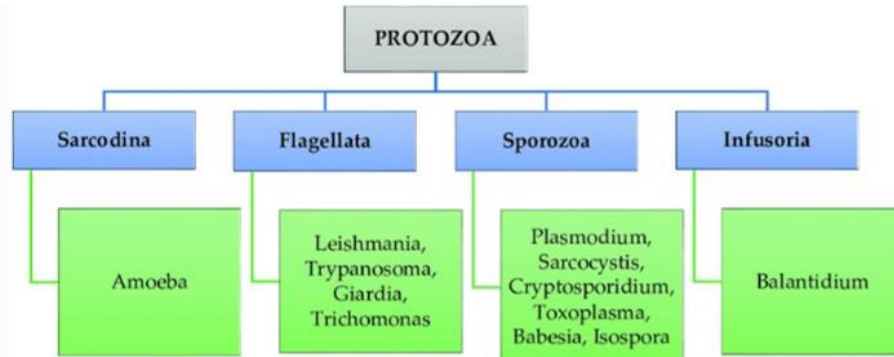


- i. In which form impulse is carried from point A to point B in the given diagram?
- ii. After an action potential, in which direction does current flow outside the membrane?
- iii. When does given axonal membrane is impermeable to negatively charged proteins present in the axoplasm?

Section D

1. **Read the text carefully and answer the questions:**

Sarcodines are unicellular/jelly-like protozoa found in fresh or sea water and in moist soil. Their body lacks a periplast. Therefore, they may be naked or covered by a calcareous shell. They usually lack flagella and have temporary protoplasmic outgrowths called pseudopodia. These pseudopodia or false feet help in movement and capturing prey. They include free-living forms such as Amoeba or parasitic forms such as Entamoeba. Zoo flagellates ciliates and I sporozoans are other groups of protozoan protists. They are all unicellular and heterotrophic. They may be holozoic, saprobic or parasitic.



- i. Write two lines about flagellated protozoans and also mention some flagellated protozoans.

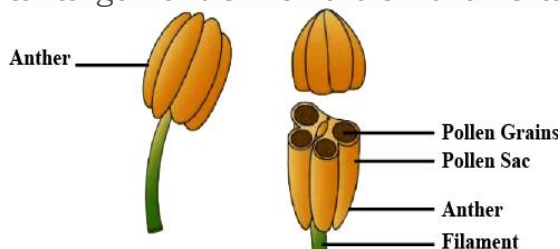
OR

Which protozoan group has two nuclei, macronucleus, and micronucleus? Mention characteristics of it.

- ii. Observe the given protozoan classification and mention what is the basis of protozoan classification.
 iii. Mention some locomotory organs of protozoa.

Read the text carefully and answer the questions:

The androecium is composed of stamens. Each stamen that 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. Stamens of flowers may be united with other members such as petals or among themselves. The stamens may be epipetalous or epiphyllous. A flower is a modified shoot wherein the shoot apical meristem changes to floral meristem. Internodes do not elongate and the axis gets condensed. The apex produces different kinds of floral appendages laterally at successive nodes instead of leaves. The arrangement of flowers on the floral axis is termed an inflorescence.



- i. Observe the figure and mention what is androecium composed of.
 ii. The pollen grains are produced in pollen-sacs. What is a sterile stamen called?
 iii. Do salvia and mustard show variation in the length of filaments within a flower?

iv. **OR**

Mention statement justifies that the given figure is racemose inflorescence.



1. Section E

2. Describe the following:

- i. synapsis
- ii. bivalent
- iii. chiasmata

Draw a diagram to illustrate your answer.

OR

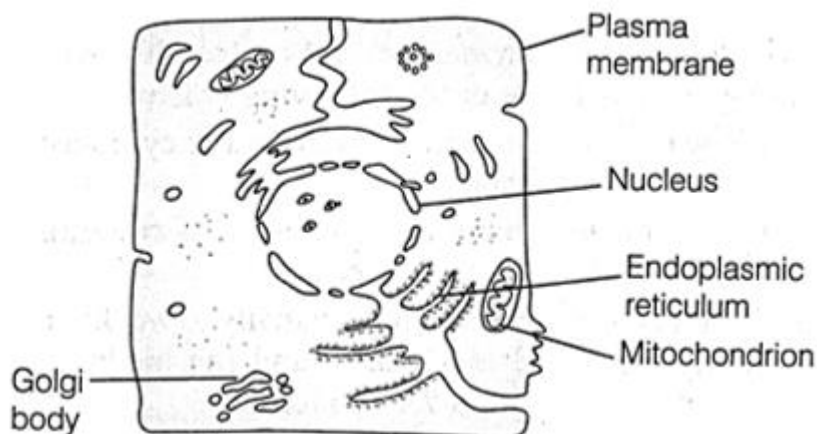
With the help of suitable diagrams describe mitosis.

3. Enumerate the assumptions that we undertake in making the respiratory balance sheet. Are these assumptions valid for a living system? Compare fermentation and aerobic respiration in this context.

OR

Where is the electron transport system operative in mitochondria? Explain the system highlighting the role of oxygen.

4. The diagram shows some of the structures present in an animal cell.



Which of these structures is responsible for

- i. Manufacture of lipids and steroids
- ii. Release of energy
- iii. Manufacture of hormones and digestive enzymes
- iv. Production of spindle fibres in cell division
- v. Endo and exocytosis?

OR

Structure and function are correlatable in living organisms. Can you justify this by taking the plasma membrane as an example?