APEEJAY SCHOOL, PANCHSHEEL PARK

Class – XI
Subject – Biology
MID TERM EXAMINATION (2024-25)

Name of the student: Date:
Time Allowed: 3hr M.M.:70

General Instructions:
(i) All questions are compulsory.

(ii) The question paper has five sections and 33 questions.

(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. Student has to attempt only one of the alternatives in such questions.

(v) Wherever necessary, neat and properly labelled diagrams should be drawn.

Section A **1x16=16**

1. Carolus Linnaeus is associated with:

(a) Law of limiting factor (b) Binomial nomenclature

(c) Origin of species (d) Inheritance of acquired character

2. What is the name of heterocyclic carbon compound attached to sugar?

(a) Nucleic acid (b) Nucleoside

(c) Nucleotide (d) All of these

3. The number of nymphs produced from single ootheca of the frog is _____.

(a) 12 (b) 16 (c) 15 (d) 10

4. Open bundle is found in which of the following?

(a) Monocot stem (b) Dicot leaf

(c) Monocot root (d) Dicot stem

5. Longest cell in human body is _____.

(a) Mast cell (b) Muscle cell (c) Blood cell (d) Nerve cell

6. The edible part in mango is

(a) Epicarp (b) tegmen (c) mesocarp (d) endocarp

7. What is samara?

(a) Fruit without seed (b) Fruits having many seeds

(c) Fruit having single seed (d) Fruits having wings formed from other structure

8. Frog shows which kind of excretion?

(a) Ammonotelic in water and ureotelic on land (b) Ureotelic

(c) Uricotelic (d) Ammonotelic

9. In mosses, the sex organs arise from:

(a) foot (b) leaf apex (c) setae (d) capsule

10. In monocot leaves stomata is present on which surface (s) of the leaf?

(a) Dorsal surface (b) Ventral surface

(c) On the midrib (d) Both surfaces

11. During which stage of meiosis, the recombination of genes takes place?

(a) Prophase I (b) Metaphase II (c) Prophase II (d) Metaphase I

12. The shape of guard cells in grasses is:

(a) Kidney (b) Dumb-bell

(c) Elliptical (d) Round

Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R).

Answer these questions by selecting the appropriate option from the following:

a. Both A and R are true and R is the correct explanation of A.

b. Both A and R are true and R is not the correct explanation of A.

c. A is true but R is false.

d. A is False but R is true.

D 13. Assertion: Haemoglobin is a quaternary protein.

Reason: It consists of 4 amino acid units

D 14. Assertion (A): Non-living objects can grow by accumulation of material on their surface.

Reason (R): Growth in living organisms is internal due to cell division.

C 15. Assertion (A): 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.

Reason (R): The inhibitor competes with the substrate for the substrate-binding site of the enzyme and the result is substrate cannot bind and so, the enzyme action declines.

16 Assertion (A): Chemical compounds found in living organisms are of two types, micromolecules, and macromolecules.

Reason (R): Micromolecules have molecular weights less than one thousand daltons while macromolecules found in the acid-insoluble fraction have molecular weights more than one thousand daltons.

d

Section B

2x5=10

17. What is the difference between monocot and dicot leaves?

18. Distinguish between Kinocilia and Stereocilia.

19. Name the aggregation formed by slime moulds during favourable conditions. What happens to it during the following unfavourable conditions

20. What makes species a basic taxonomic category?

21. Polluted water bodies have usually very high abundance of plants like *Nostoc* and *Oscillitoria*. Give reasons.

OR

Are chemosynthetic bacteria autotrophic or heterotrophic? Give reason.

Section C

3x7=21

22. Bryophytes are found in which diverse habitats. Describe briefly.

23. Could the number of eggs or young ones produced by an oviparous and viviparous mother be equal? Why?

24. What are nucleotides? Describe their structure.

25. What is the basis of classification of algae?

26. Explain briefly

(i) Protonema (ii) Antheridium (iii) Archegonium (iv) Diplontic (v) Sporophyll (vi) Isogamy

27. Differentiate between:

i. monocot and dicot flower

ii. gamopetalous and polypetalous flowers

OR

What does the term placenta refer to? Draw various types of placentations in the flower as seen in T.S. and V.S.

28. Define the following terms along with examples:

i. Phylum ii. Class iii. Family iv. Order v. Genus vi. Species

4x2=8

Section D

29. Read the text carefully and answer the questions:

Linnaeus gave two kingdom classification/which consists of kingdom Plantae and kingdom Animalia. This classification was based on the mode of nutrition/ reproduction/ presence or absence of cell wall. However, this system had many drawbacks like there was no distinction between eukaryotes and prokaryotes. Then, came the three-kingdom classification in which single-celled bacteria and protozoans were kept in the kingdom Protista. This system also failed to classify all living organisms into appropriate categories. Finally a five Kingdom classification was proposed by dividing all the organisms into five kingdom and it will be accepted as modern system of classification. We know that Haeckel proposed the term Protista for unicellular organisms

a) Who proposed the five-kingdom classification? And which criteria were used to classify organism in the 5-kingdom system?

(b) All eukaryotic unicellular organisms belong to which kingdom? Also, mention its two characteristics.

(c) What do you understand by term heterotrophic? Is Euglena heterotrophic?

30. Read the text carefully and answer the questions:

Each flower normally has four floral whorls, viz., calyx, corolla, androecium and gynoecium. The gynoecium is the female reproductive part of the flower and is made up of one or more carpels. A carpel consists of three parts namely stigma, style and ovary. The ovary is the enlarged basal part. The style connects the ovary to the stigma. The stigma is usually at the tip of the style and is the receptive surface for pollen grains. After fertilisation, the ovules develop into seeds and the ovary matures into a fruit. The arrangement of ovules within the ovary is known as placentation. The placentation are of different types namely, marginal, axile, parietal, basal, central and free central.

(a) Mention the male and female parts of the flower. Explain shortly.

(b) What is aestivation?

(c) Some statements are given below, find out incorrect statements and correct them?

(i) Each ovary bears one or more ovules attached to a flattened, cushion-like placenta.

(ii) In mustard one carpel is present which may be free.

(iii) Ovary is the enlarged basal part, on which lies the elongated tube, the stigma.

(iv) After fertilisation, the ovules develop into seeds and the ovary matures into a fruit.

(d) What is basal placentation? Give one example.

Section E

31. Describe meiosis II with the help of suitable diagrams.

OR

What do you mean by cell cycle? Explain cell cycle and interphase in detail.

32. Describe the structure of the membrane as proposed in fluid mosaic model.

OR

What is the difference between cell wall and ribosomes of a prokaryotic and a eukaryotic cell?

33. Draw illustrations to bring out the anatomical difference between

(a) Monocot root and dicot root

(b) Monocot stem and dicot stem

OR

Draw a neat labelled diagram of digestive system of frog.