



विद्या सर्वार्थ साधिका

ANANDALAYA
PERIODIC TEST - 2
Class : XI

Subject: Biology
Date : 27-09-2023

MM : 70
Time: 3 hours

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, the neat and properly labelled diagrams should be drawn.

SECTION A

1. The 'Systema Naturae' was published by _____. (1)
(A) John Ray (B) Aristotle (C) Darwin (D) Carolus Linnaeus
2. _____ comprises of a group of related species which has more characters in common (1)
in comparison to species of other genera.
(A) Family (B) Order (C) Genus (D) Class
3. The sequence that indicates the taxonomic categories of wheat is _____. (1)
(A) *Triticum*, Poaceae, Poales, Monocotyledonae
(B) Poaceae, Poales, Monocotyledonae, *Triticum*
(C) Poales, Poaceae, *Triticum*, Monocotyledonae
(D) Monocotyledonae, Poales, Poaceae, *Triticum*
4. *Mucor*, *Rhizopus* and *Albugo* belong to _____. (1)
(A) Ascomycetes (B) Basidiomycetes (C) Deuteromycetes (D) Phycomycetes
5. Choose the correct match: (1)
(A) Photosynthetic autotrophs - Nutrient cycling
(B) Heterotrophic bacteria - Production of antibiotics
(C) Chemosynthetic autotrophs - Nitrogen fixation
(D) Mycoplasma - Production of curd
6. Red algae are red due to the presence of: (1)
(A) R-Phycocyanin (B) R-Phycoerythrin (C) C-Phycocyanin (D) C-Phycoerythrin
7. What is common in all three, Funaria, Dryopteris, and Ginkgo? (1)
(A) Independent sporophyte
(B) Presence of archegonia
(C) Well developed vascular tissues
(D) Independent gametophyte
8. The water vascular system is found in _____. (1)
(A) sea anemone (B) sea pen (C) sea cucumber (D) sea horse
9. Which one of the following class of animals is correctly matched with its characteristic (1)
features?
(A) Mammalia : Presence of pinna; Coelomate; Gives birth to young ones
(B) Reptilia: Diploblastic; Moist skin; Lays eggs
(C) Aves: Aerial; Scaly skin; Beak with teeth
(D) Amphibia: Webbed feet; Bisexual; Triangular body

10. Cortex is the region found between _____ . (1)
 (A) epidermis and stele (B) pericycle and endodermis
 (C) epidermis and vascular bundle (D) pericycle and pith
11. Which one of the following pairs is wrong? (1)
 (A) Radicle – Roots (B) Plumule – Root cap
 (C) Sugarcane – Monocot (D) Pea – Dicot
12. The transverse section of a plant shows following anatomical features. Identify the plant specimen. (1)
 (i) Large number of scattered vascular bundles surrounded by bundle sheath.
 (ii) Large conspicuous parenchymatous ground tissue.
 (iii) Vascular bundles conjoint and closed.
 (iv) Phloem parenchyma absent.
 (A) Monocot Stem (B) Dicot Stem (C) Dicot Stem (D) Monocot root

Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- (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.
13. Assertion: Chlorella and Spirulina are used as a food supplement by space travellers. (1)
 Reason: These are unicellular algae.
14. Assertion: The open circulatory system is found in most arthropods. (1)
 Reason: Arthropods contain haemolymph which directly bathes internal tissues and organs.
15. Assertion: The alternate type of phyllotaxy is the arrangement of leaves in which a single leaf (1)
 arises at each node in an alternate manner.
 Reason: The alternate type of phyllotaxy is seen in China rose and mustard plant.
16. Assertion: Species are static units of classification. (1)
 Reason: Species changes over period of time.

SECTION B

17. How are Zoological parks useful to biologists? (2)
18. Polluted water bodies contain plants like *Nostoc* and *Oscillatoria*. Give reasons. (2)
19. What is the basis of the classification of Algae? (2)
20. Birds and mammals share common features. List any two common features shared by them. (2)
21. Phylum Arthropoda is the largest phylum in animal kingdom. Mention any four diagnostic (2)
 features that contributed to this phylum.

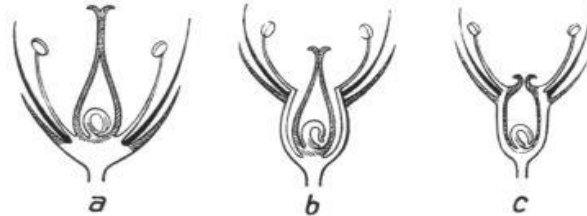
OR

“All vertebrates are chordates but all chordates are not vertebrates.” Justify the statement.

SECTION C

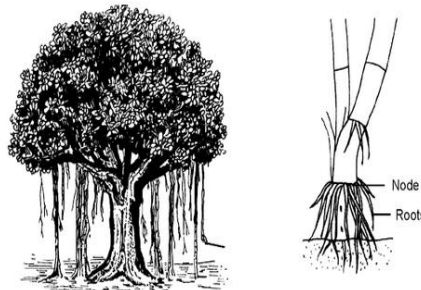
22. (a) List any four criteria that you would choose to classify people that you meet often? (3)
 (b) Why is binomial nomenclature the most acceptable mode of naming organisms?
23. Discuss the salient features of the virus with the help of a diagram. (3)
24. (a) Biological classification is a dynamic and ever evolving phenomenon which keeps (3)
 changing with our understanding of life forms. Justify the statements with the help of two
 examples.
 (b) Hydra has a cavity with a common opening. Will you classify it under coelomate? Why
 or why not?

25. The plant body of the higher plants is well-differentiated and well developed too. Roots are the organs that are used for the process of absorption of water. (3)
 (a) What is the part equivalent to roots in the less developed lower plants?
 (b) Draw and describe the different regions of the root.
26. Give any three features that have led to the dominance of vascular plants. (3)
27. Based on the position of calyx, corolla and androecium in respect to the ovary on the thalamus, the flowers are described and classified. (3)
 Figures a, b and c depict the position of floral parts on the thalamus of a flower. Identify and describe the arrangement observed in each of them with an example.



OR

Roots in some plants change their shape and structure and become modified to perform functions other than absorption and conduction of water and minerals.



X

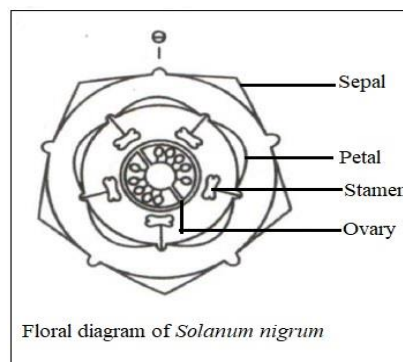
Y

- (a) Identify the specimen and type of root modification seen in specimens X and Y.
 (b) Distinguish between these two types of root modification by stating any two differences.
28. What is the epidermal cell modification in plant leaves which prevents water loss? (3)

SECTION D

Q. No. 29 and 30 are case-based questions. Read the passages and answer the following sub questions.

29. Floral diagrams and floral formulas are very important in taxonomy. A floral diagram is a graphic representation of a flower structure. It shows the number of floral organs, their arrangement and fusion. Different parts of the flower are represented by their respective symbols. Floral diagrams are useful for flower identification or can help in understanding angiosperm evolution. (4)



- (a) State the characteristics of androecium and gynoecium that can be inferred from the above given floral diagram.

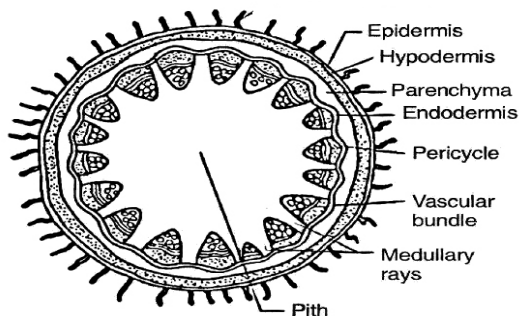
OR

- Explain the type of symmetry seen in the flower of *Solanum nigrum*.
 (b) Write the general floral formula of Solanaceae.

(c) Give any two economic importance of plants of this family.

30. The study of the internal structure of plants is called anatomy. Plants have cells as the basic unit, cells are organised into tissues and in turn, the tissues are organised into organs. Different organs in a plant show differences in their internal structure. Within angiosperms, the monocots and dicots are also seen to be anatomically different. Internal structures also show adaptations to diverse environments. For a better understanding of the tissue organisation of roots, stems and leaves, it is convenient to study the transverse and cross sections of the mature zones of these organs.

Study the given figure of the cross section of a plant specimen and answer the given questions.



- (a) Identify whether it is a stem or root and write an anatomical feature of it.
(b) Describe the vascular bundles of this type of plant.
(c) What is the difference between the epidermis of the leaf and the epidermis of the given figure?

SECTION E

31. (a) Write any three major differences between chordates and non-chordates and draw a schematic sketch of a hypothetical chordate showing those features.
(b) Write the similarity between chordates and non-chordates.

OR

What is the relationship between germinal layers and the formation of body cavity in case of coelomate, acoelomates and pseudocoelomates? Explain with examples.

32. The arrangement of ovules in an ovary is called placentation.
(a) What does the term placenta refer to?
(b) Name and explain the various types of placentation as seen in the ovary.

OR

The mode of arrangement of sepals and petals in a flower bud is called aestivation. Explain and draw all the possible types of aestivation in a pentamerous flower.

33. Distinguish between the following term pairs by stating any two differences:
(i) Exarch and Endarch condition of protoxylem
(ii) Stele and Vascular bundle
(iii) Open Bundle and closed Vascular Bundle
(iv) Stem hair and Root hair
(v) Protoxylem and Metaxylem

OR

List any four anatomical differences between the leaf of Peepal and Maize plant. Draw the diagram of cross section of the dicot leaf and label the parts that differ from the monocot leaf.