विद्या सर्वार्थि साधिका

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PERIODIC TEST - 2

Class: XI

Subject: Biology (044) MM : 70

Date : 22-09-2025 Time: 3 hours

General Instructions:

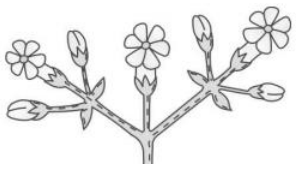
1. There are 33 questions in all. All questions are compulsory.
2. This question paper has five sections: Section A, Section B, Section C, Section D and Section E. All the sections are compulsory.
3. Section A consists of 12 MCQs and 4 Assertion and Reason questions of 1 mark each, Section B consists of 5 questions of 2 marks each, Section C consists of seven questions of 3 marks each, Section D consists of two case study-based questions of 4 marks each and Section E consists of three long questions of 5 marks each.
4. There is no overall choice. However, an internal choice has been provided in Section B, C, D and E. You must attempt only one of the choices in such questions.
5. Draw neat diagrams wherever necessary.

SECTION A

1. Pyrenoids are made up of _____. (1)
   (A) core of starch surrounded by sheath of protein
   (B) core of protein surrounded by fatty sheath
   (C) proteinaceous centre and starchy sheath
   (D) core of nucleic acid surrounded by protein sheath

2. Euspongia is commonly known as _____. (1)
   (A) Marine water sponge (B) Bath sponge
   (C) Fresh water sponge (D) Terrestrial sponge

3. Identify the given diagram and choose the incorrect option. (1)
   (A) The main axis terminates into a flower
   (B) Flowers are basipetally arranged
   (C) Growth of the peduncle is determined
   (D) Older flowers are towards the base and younger at the apex



4. The title used by Linnaeus for his publication was _____. (1)
   (A) Systema Naturae (B) Genera Naturae
   (C) Philosophie Zoologique (D) Die Nature lichen pflanzen

5. Red tides are produced in the sea by the rapid multiplication of _____. (1)
   (A) Colletotrichum (B) Euglena
   (C) Gonyaulax (D) Trypanosoma

6. Which is the dominant phase in the life cycle of a pteridophyte? (1)
   (A) Gametophyte (B) Prothallus (C) Sporophyte (D) Zygote

7. Ctenophores are exclusively marine organisms. They are radially symmetrical and diploblastic. These are commonly called _____. (1)
   (A) Sea anemones (B) Sea pen (C) Sea squash (D) Sea walnuts

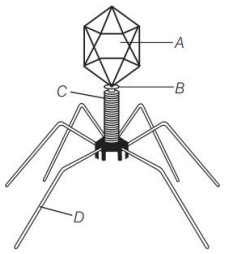
8. Bracket fungi (Polyporus) belong to the class _____. (1)
(A) Phycomycetes (B) Ascomycetes (C) Basidiomycetes (D) Deuteromycetes

9. Secondary xylem and phloem in dicot stem are produced by _____. (1)
(A) Apical meristem (B) Vascular cambium
(C) Axillary meristems (D) Phellogen

10. Palisade parenchyma is absent in leaves of _____. (1)
(A) Soybean (B) Gram (C) Sorghum (D) Mustard

11. Housefly belongs to _____. (1)
(A) Order-Insecta (B) Family-Musca (C) Genus-Diptera (D) Phylum-Arthropoda

12. Identify the label A, B, C and D in the following figure and choose the correct option. (1)
(A) A–Head, B–Collar, C–Sheath, D–Tail fibres
(B) A–Collar, B–Head, C–Sheath, D–Tail fibres
(C) A–Head, B–Collar, C–Tail fibres, D–Sheath
(D) A–Collar, B–Tail fibres, C–Head, D–Sheath



Answer the question Nos. 13 to 16, by 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. A: Mycelium in Deuteromycetes is aseptate. (1)
R: Phycomycetes possess aseptate and coenocytic mycelium.

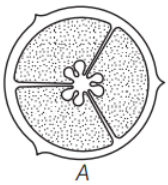
14. A: Intercalary meristem occurs in between mature tissue. (1)
R: Intercalary meristem occurs in grasses and regenerates parts removed by grazing herbivores.

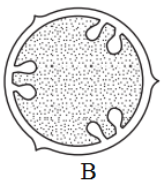
15. A: Malpighian tubules help in removal of excretory products from haemolymph. (1)
R: Malpighian tubules present at the junction of midgut and foregut.

16. A: Bryophytes are amphibians of the plant kingdom. (1)
R: They live in soil but depend on water for sexual reproduction.

SECTION B

17. Name the type of placentation shown in the given figures (A) and (B). Give one example of each type. (2)


A


B

18. State the nature of the cell wall in diatoms. (2)

19. Differentiate between heterosporous and homosporous pteridophytes with one example of each. (2)

20. What is the two-kingdom classification? Give its drawback. (2)

21. Draw the diagram of V.S of maize seed and label six parts. (2)

OR

Describe various zones of fruit by taking an example of succulent fruit.

SECTION C

22. "Green algae are ancestors of land plants". Comment on this statement. (3)

23. Name the three types of respiration in a frog. How does a frog respire during hibernation? (3)

24. What are the economic importance of plants of family solanaceae? Draw the floral diagram of plant *Solanum nigrum.* (3)

25. The transverse section of a plant material shows the following features: (3)
Vascular bundles are conjoint, closed and scattered and are surrounded by the sclerenchymatous bundle sheath. What will you identify it as? Also, write any other four features of this specimen.

26. Write briefly on the types of roots present in Cycas and Pinus. (3)

27. Enumerate the unique features in phylum chordata with the help of a diagram. (3)

28. Explain the structure of stomata with a labelled diagram. (3)

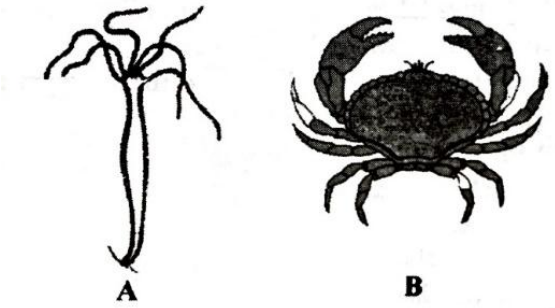
OR

Two types of compound leaves are shown below.

(a) Identify the types of compound leaves A and B.
(b) Give one example of each.
(c) Differentiate between the two types of compound leaves.

SECTION D

29. Read the given passage and answer the following questions:
In Biology, symmetry pertains to an attribute of organisms showing regularity in parts on a plane or around an axis. An organism that is symmetrical would have a balanced distribution of duplicate parts on each side of the axis. In most instances, the parts are not an exact but a near repetition. This also accounts for the patterns in nature. The absence of symmetry is termed asymmetry. Examples of symmetry in organisms are bilateral symmetry, radial symmetry, and biradial symmetry.
(a) In which phylum do the adults exhibit radial symmetry and larva exhibit bilateral symmetry? (1)
(b) A small aquatic organism moves in a straight line to capture prey with its tentacles arranged around a central axis. Which type of symmetry does it exhibit, and why might this be advantageous for its feeding? (1)
(c) (i) Identify the type of symmetry in the given animals A and B, and compare the survival advantages of both animals. (2)



OR

(c) (ii) Explain the significance of the water vascular system in Phylum Echinodermata.

30. In a dicotyledonous root, the outermost layer is the epiblema, many cells of which protrude as unicellular root hairs. Beneath this lies the cortex, and its innermost layer is the endodermis, comprising barrel-shaped cells with Casparian strips made of suberin. Interior to the endodermis is the pericycle, from which lateral roots and vascular cambium (during secondary growth) initiate. The pith is generally small.

(a) How do Casparian strips in the endodermis regulate water and mineral movement in a dicot root? (1)

(b) Explain the contribution of the pericycle in forming lateral roots and vascular cambium. (1)

(c) (i) Give two structural features of the epiblema that help in water and mineral absorption. (2)

OR

(c) (ii) Define stele. List the structures that form its composition.

SECTION E

31. (a) What is meant by (i) open type and (ii) closed type of circulatory system in animals? (5)

(b) Represent diagrammatically the (i) coelomate, (ii) pseudo coelomate and (iii) acoelomate conditions among animals.

OR

(a) Mention the body organization level exhibited by sponges.

(b) Describe the path of water through a sponge's canal system with the help of a diagram.

(c) What are choanocytes, and its role in sponges?

32. (a) Name the four different kinds of whorls typically found in a flower. (5)

(b) Differentiate between actinomorphic and zygomorphic symmetry in flowers

(c) What is a hypogynous flower, and what term describes its ovary position?

OR

Differentiate the types of aestivations with suitable examples and explain their significance in floral identification.

33. (a) Name the three principal divisions of a frog's brain. (5)

(b) Identify the region of the frog's brain that consists of the olfactory lobes and paired cerebral hemispheres.

(c) State the major structures that distinguish the midbrain of a frog.

(d) Which portion of the hindbrain extends into the spinal cord?

OR

(a) How do the presence of secondary sexual characteristics provide adaptive advantages for male frogs during reproduction?

(b) Name the following in a frog:

(i) The specialized structure that develops on the forelimbs of male frogs during the breeding season that ensures successful mating.

(ii) The structure that adheres the testis on to a kidney.

(iii)The small median opening through which sperms/ova and urine are expelled to the exterior.