



Delhi Public School, Howrah

PERIODIC TEST I (2024-2025)

Class-XI

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

Subject:- Biology (Code No. 044)

Time:-3 Hours

F.M.-70

General Instructions:

- All questions are compulsory.
- The question paper has five sections and 33 questions. All questions are compulsory.
- 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.
- 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.
- Wherever necessary, neat and properly labeled diagrams should be drawn.

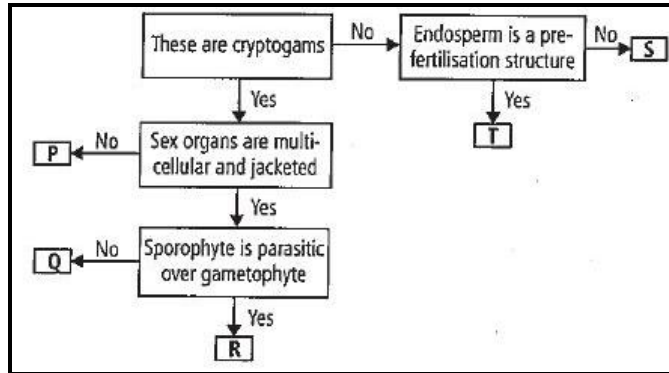
Q. No.	SECTION A	Marks												
1.	<p>Match the following and choose the correct options:</p> <table border="1"><thead><tr><th>A</th><th>B</th></tr></thead><tbody><tr><td>A. Classification</td><td>I. System of naming organisms.</td></tr><tr><td>B. Identification</td><td>II. Science that deals with naming, describing and classification of all living organisms including plants</td></tr><tr><td>C. Nomenclature</td><td>III. Branch of study for classification</td></tr><tr><td>D. Systematics</td><td>IV. Practical use of classification to distinguish one organism from another</td></tr><tr><td>E. Taxonomy</td><td>V. Organizing organisms in hierarchical system.</td></tr></tbody></table> <p>a. A-II; B-III; C-I; D-V; E-IV b. A-V; B-IV; C-I; D-III; E-II c. A-III; B-II; C-IV; D-V; E-I d. A-I; B-II; C-III; D-IV; E-V</p>	A	B	A. Classification	I. System of naming organisms.	B. Identification	II. Science that deals with naming, describing and classification of all living organisms including plants	C. Nomenclature	III. Branch of study for classification	D. Systematics	IV. Practical use of classification to distinguish one organism from another	E. Taxonomy	V. Organizing organisms in hierarchical system.	1
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2.	<p>If an organism is in the same class but not in the same family it may belong to same:</p> <p>a. Genus b. Species c. Variety d. Order</p>	1												
3.	<p>A tooth scraping yields large numbers of corkscrew shaped bacteria. These bacteria are referred to as:</p> <p>a. Bacilli b. Cocci c. Spirilli d. Helici</p>	1												

4. Which of the following are the characters of Dinoflagellates?
 (i) Planktonic golden yellow algae with soap box like structure.
 (ii) Marine red biflagellate Protista.
 (iii) Appear yellow, green, brown, blue and red in colour.
 (iv) Biflagellate organisms with pellicle.
 (v) Saprophytic or parasitic unicellular forms.
- (i), (ii) and (iii) only
 - (ii), (iv) and (v) only
 - (ii) and (iii) only
 - (ii) and (v) only

1

5. Refer to the given flow chart regarding different groups of kingdom plantae. Which of the following is true regarding P, Q, R, S and T?

1



- Examples of group 'P' include Riccia, Marchantia, Sphagnum, etc.
- Members of group 'R' can be both homosporous as well as heterosporous.
- Group 'Q' includes seedless vascular plants having saprophytic plant body.
- Group 'S' is more ancient than group 'T' and formed a dominant vegetation on earth some 200 million years back in Mesozoic era.

6. In which one of the following the genus name, its two characters and its phylum are not correctly matched?

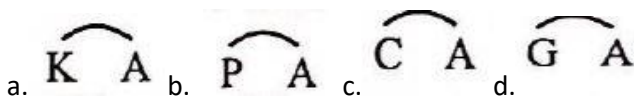
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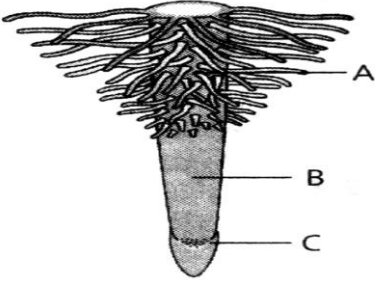
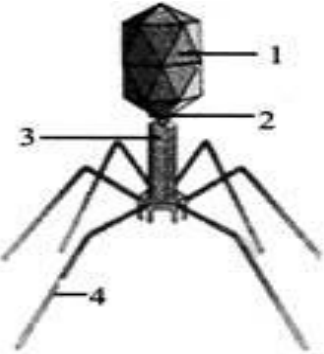
	Genus name	Characters	Phylum
(a)	<i>Pila</i>	(i) Body segmented (ii) Mouth with radula	Mollusca
(b)	<i>Asterias</i>	(i) Spiny skinned (ii) Water vascular system	Echinodermata
(c)	<i>Sycon</i>	(i) Pore bearing (ii) Canal system	Porifera
(d)	<i>Periplaneta</i>	(i) Jointed appendages (ii) Chitinous exoskeleton	Arthropoda

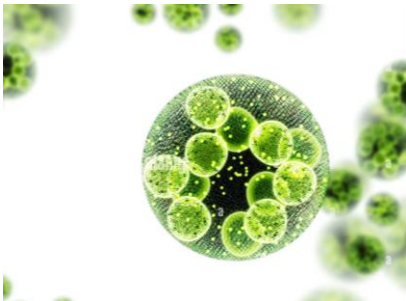

- (a)
- (b)
- (c)
- (d)

7. Which of the following symbols denotes presence of tepals and epitepalous stamens in a flower?

1



<p>8. Which of the following statements is correct with respect to the given figure showing different zones of a typical root?</p>  <p>a. Part B mainly helps in absorption of water b. Quiescent centre is present in part B. c. Part A is most suitable for anatomical studies of root. d. Differentiation of cells can be observed in part C.</p>	1
<p>9. Which among the following is an incorrect statement?</p> <p>a. <i>Chlamydomonas</i> is an example of unicellular algae. b. <i>Chlamydomonas</i> have flagella to promote their movement. c. <i>Ulothrea</i> is a unicellular autotrophic algal. d. <i>Spirogyra</i> attains its name because of spiral like arrangement of chloroplasts.</p>	1
<p>10. If the zygote of a bryophyte consists of 2x number of chromosomes, how many chromosomes should the sporophyte have? a. 2x b. 3x c. 4x d. x</p>	1
<p>11. Although most animals are bilaterally symmetrical, a few exhibit radial symmetry. What is an advantage of radial symmetry?</p> <p>a. It confuses predators. b. It allows the animal to gather food from all sides. c. It allows the animal to undergo rapid, purposeful movement in any direction. d. It lets an animal use its dorsal surface to sense its environment.</p>	1
<p>12. The given figure shows some structures labelled as 1, 2, 3 and 4. Which structure has the protein coat that encloses the nucleic acid?</p>  <p>a. 1 b. 2 c. 3 d. 4</p>	1
<p>Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:</p> <p>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.</p>	

13.	Assertion (A): Annelids like <i>Nereis</i> are aquatic organisms and can swim. Reason (R): <i>Nereis</i> shows organ system level of body organization and bilaterally symmetrical.	1
14.	Assertion (A): In cymose branching, growth of terminal bud stops after some time. Reason (R): The growth of the main stem is definite.	1
15.	Assertion (A): Cnidoblasts are present on the tentacles and the body in cnidarians. Reason (R): Cnidoblasts are used for anchorage, defence and capture of the prey.	1
16.	Assertion (A): Chlorella could serve as a potential source of food and energy. Reason (R): Chlorella, when dried, has 15% protein, 45% fat, 10% carbohydrate, 20% fibre, and 10% minerals and vitamins.	1
SECTION B		
17.	A scientist has come across a plant which he feels is a new species. How will he go about its identification, classification and nomenclature.	2
18.	Kamal, a student of class IX has brought a crab and an apple snail from the beach. He has identified them both as members of Phylum Mollusca, as they have a shell. As a senior student of biology, help him to identify the animals correctly. a. Name the phylum crab belongs to and that which apple snail belongs to. b. Write any two differences between the animals of the two phyla.	2
19.	Viruses are non-cellular organisms but replicate themselves once they infect the host cell. To which kingdom do viruses belong to? Explain your answer.	2
20.	Draw the diagram of a leaf and label the following in your diagram. i. Stipule ii. Leaf base iii. Petiole iv. Lamina	2
21.	a. <i>Sphagnum</i> has lot of economic importance. Justify. b. Find relation between the two given pictures. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>A-</p> </div> <div style="text-align: center;">  <p>B-</p> </div> </div> <p style="text-align: center;">OR</p> a. Both gymnosperms & angiosperm bear seeds but then why are they classified separately? b. Find relation between the two given pictures.	2



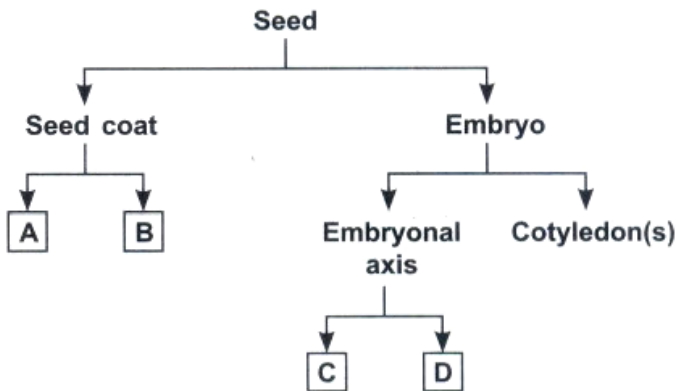
A-

B-

SECTION C

22. Write the floral formula of *Petunia alba* and also draw its floral diagram. **3**

23. The ovules after fertilization develop into seeds. The parts/components of a seed are shown below. Answer the questions that follow: **3**



- Identify the two layers (A and B) of the seed coat and the two parts (C and D) of the embryonal axis.
- Give an example of a seed that (i) has endosperm (ii) is non-endospermous.

24. **3**

- Why might the evolution of specialized tissues be important for animal function and complexity?
- How does a change in the circulatory system organization support the body designs in cephalopods compared to other molluscs?
- A marine biologist catches a species of fish she has never seen before. Upon examination, she determines that the species has a predominantly cartilaginous skeleton and a swim bladder. If its pectoral fins are not fused with its head, to which category of fish does the specimen belong?

25. **3**

- Properties of cell organelles are not always found in the molecular constituents of cell organelles. Justify.
- What is the similarity and dissimilarity between “whole moong daal” and “broken moong daal” in terms of respiration and growth? Based on these parameters classify them into living or nonliving?

26. **3**

Draw a flowchart to show the broad classification of kingdom Animalia based on common fundamental features.

OR

Draw a diagram to show the fundamental characteristics of Chordata and Hemichordata.

27. **3**

“Pteridophytes are more suitable for dry terrain than bryophytes”. Defend or argue against this statement.

28. **3**

Identify the organism from the given picture. What observable features in the given organism would make you classify it under the Kingdom Protista?



SECTION D

Q.no 29 and 30 are case based questions. Each question has subparts with internal choice in one subpart.

29. **Refer to the passage and answer the following questions:**

4

These plants have photosynthesizing “segmented”, hollow stems that are sometimes filled with pith. A whorl of leaves forms the junction between each section. Plants’ subsurface sections are made up of jointed rhizomes from which roots and aerial axes arise. Intercalary meristems sprout in each segment of the stem and rhizomes as the plant grows taller.

- Which class of pteridophytes is referred to in the above-mentioned case?
- Provide an example of species found in the above-mentioned class of pteridophyte.
- The above-mentioned plants differ with respect to their growth in comparison to angiosperms?

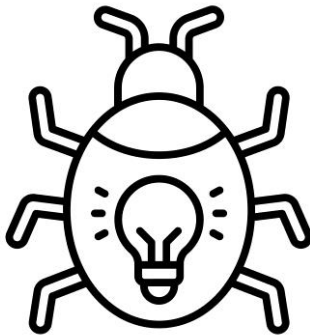
OR

Draw a well labelled diagram of a species found in the above-mentioned class.

30. **Observe the given picture and answer the following questions:**

4

Given picture represents a phenomenon shown by specific group of organisms in animal kingdom.



- Identify the phenomenon and define it.
- Give example and draw the diagram of the organism who possess this phenomenon.
- What can be the possible uses of this phenomenon in an organism?

OR

Mention the mode of reproduction seen in the phylum in which this organism belongs to.

SECTION E

31.	<p>a. In a given habitat we have 20 plant species and 20 animal species. Should we call this as 'diversity' or 'biodiversity'? Justify your answer.</p> <p>b. Write the full form of ICBN.</p> <p>c. What makes species a basic taxonomic category?</p> <p style="text-align: center;">OR</p> <p>a. Why there is a need to standardize the system of naming of living organisms?</p> <p>b. Write the full form of ICZN.</p> <p>c. Why is death considered as regulatory process on earth?</p>	5
32.	<p>The mode of arrangements of sepals or petals in a floral bud is known as aestivation. Draw and explain the various types of aestivations possible for a typical pentamerous flower.</p> <p style="text-align: center;">OR</p> <p>The arrangements of ovules within the ovary is known as placentation. What does the term placenta refer to? Explain and draw various types of placentation in the flower as seen in T.S. or V.S.</p>	5
33.	<p>Rekha's teacher taught her about various types of organisms such as algae, plants, fungi, animals etc. But she is confused and unable to find similarities and differences between plants and fungi. Help her by giving a clear description of the similarities and differences between plants and fungi.</p> <p style="text-align: center;">OR</p> <p>Rahul took ascocarp and a basidiocarp for experiment. He don't know about similarities and differences between them. Help him by giving a few points of similarities and differences.</p>	5