CLASS IX – SCIENCE PRACTICE PAPER (2026-27)

Chapter 12: Patterns in Life – Diversity and Classification

Max. Marks: 40 **Time Allowed: 1 hour 30 minutes**

General Instructions:

(i) This question paper consists of **20 questions** in **5 sections (A to E)**. All questions are compulsory. Internal choice is given in some questions.

(ii) **Section A** has 10 questions of 1 mark each: Q1–8 are Multiple Choice Questions and Q9–10 are Assertion–Reason questions.

(iii) **Section B** has 4 Very Short Answer questions of 2 marks each (about 30–40 words).

(iv) **Section C** has 3 Short Answer questions of 3 marks each (about 50–60 words).

(v) **Section D** has 2 Case-Based questions of 4 marks each.

(vi) **Section E** has 1 Long Answer question of 5 marks with an internal choice.

(vii) Questions are competency-based and application-oriented. Answers should be to the point and supported by reasons where asked.

(viii) **Questions 2, 6, 12, 16, 19 and 20 are figure-based** and refer to Fig. 1 to Fig. 6.

SECTION A – Objective Questions (10 × 1 = 10 marks)

1 Meena and Hari see a small animal in their garden. Which observation confirms that it is an *insect* and not an earthworm? **1**

(A) Bilaterally symmetrical body

(B) Cylindrical body

(C) Body with jointed legs

(D) Body with little segmentation

2 **[Figure-based]** Fig. 1 shows two single-celled organisms, X and Y. In X, the genetic material lies free in the cytoplasm. In Y, it is enclosed in a membrane-bound nucleus. Organism X belongs to the kingdom: **1**

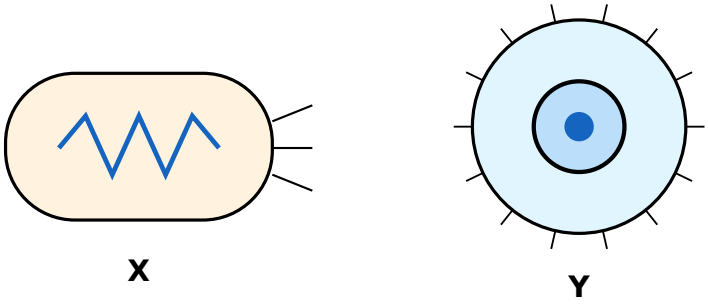


Fig. 1: Two single-celled organisms

(A) Protista

(B) Monera

(C) Fungi

(D) Animalia

3 The cell wall of fungi is made up of: **1**

(A) chitin

(B) cellulose

(C) protein

(D) starch

4 Which of the following possesses a notochord at some stage of its life but has no backbone? **1**

(A) *Hydra*
(B) Starfish
(C) Earthworm
(D) *Amphioxus*

5 Which of the following is the correct way of writing the scientific name of mango (as printed in a book, in italics)? **1**

(A) mangifera indica
(B) Mangifera indica
(C) Mangifera Indica
(D) MANGIFERA INDICA

6 **[Figure-based]** Fig. 2 shows four plants P, Q, R and S. The plant that has true roots, stem and leaves with xylem and phloem, but does *not* produce seeds, is: **1**

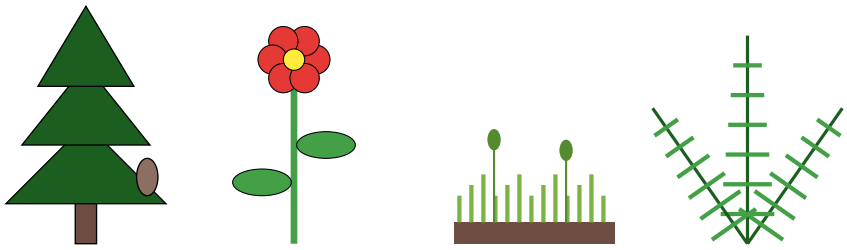


Fig. 2: Four plants

(A) P
(B) Q
(C) R
(D) S

7 Which group of animals has a hard internal skeleton of calcium carbonate but no notochord? **1**

(A) Echinodermata
(B) Arthropoda
(C) Mollusca
(D) Annelida

8 The five kingdom classification was proposed by R. H. Whittaker in: **1**

(A) 1758
(B) 1866
(C) 1969
(D) 1938

Questions 9 and 10 consist of two statements: Assertion (A) and Reason (R). Choose the correct option:
(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.

9 **Assertion (A):** Pteridophytes do not produce seeds. **1**

Reason (R): Pteridophytes have vascular tissues, xylem and phloem.

10 **Assertion (A):** All unicellular organisms belong to the kingdom Protista. **1**

Reason (R): Bacteria are unicellular prokaryotes placed in the kingdom Monera.

SECTION B – Very Short Answer Questions (4 × 2 = 8 marks)

11 (a) What is biodiversity? (1) **2**

(b) What are endemic species? Give one Indian example. (1)

12 **[Figure-based]** Fig. 3 shows the longitudinal section of an aquatic animal that has a single opening for taking in food and removing waste. **2**

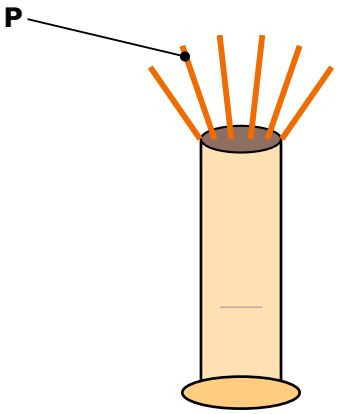


Fig. 3: An aquatic animal

(a) Name the phylum of this animal and its level of body organisation. (1)

(b) Name part P and state its use. (1)

13 (a) Name the phylum to which an earthworm belongs. State one feature of its body that gives greater flexibility of movement. (1) **2**

(b) State one advantage of the hard external skeleton of arthropods. (1)

14 *Attempt either option A or B.* **2**

A. Why do scientists use binomial nomenclature? State two rules for writing a scientific name. (1 + 1)

OR

B. Distinguish between Porifera and Cnidaria on the basis of body organisation and the way of getting food. (1 + 1)

SECTION C – Short Answer Questions (3 × 3 = 9 marks)

15 A student observes two unlabelled slides. Slide 1 shows a single-celled organism with a cell wall and no true nucleus. Slide 2 shows a single-celled organism with a well-defined nucleus and many cilia. (i) Name the kingdom of each organism. (ii) Give one reason for each choice. (iii) State one way in which organisms like the one on slide 1 are useful to humans. (1 + 1 + 1) **3**

16 **[Figure-based]** Fig. 4 shows the levels of classification of a tiger, from kingdom to species. **3**

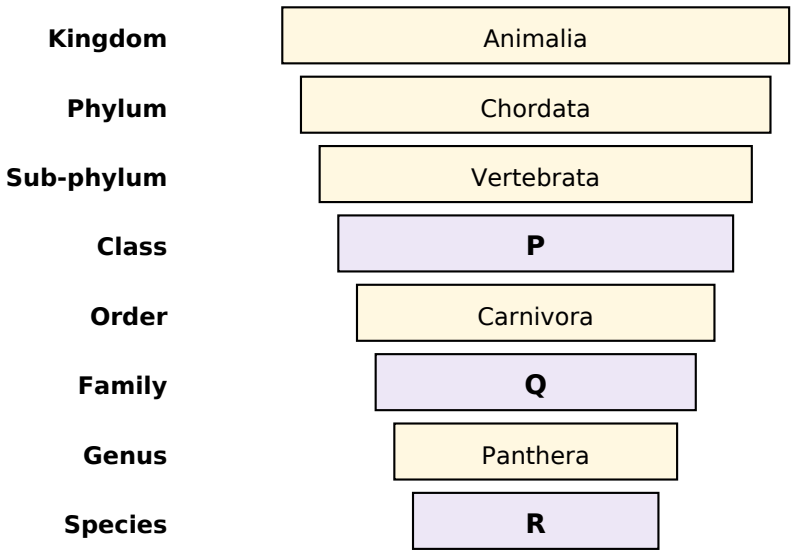


Fig. 4: Hierarchy of classification of the tiger

(i) Name the groups P and Q. (1)

(ii) Name R and write the complete scientific name of the tiger correctly. (1)

(iii) Do organisms of the same kingdom or the same genus share more features? Give a reason. (1)

17 *Attempt either option A or B.* **3**

A. Why did scientists move from the two kingdom system to the five kingdom system? Give any three reasons. (3)

OR

B. Biodiversity is under threat from human activities. State any three such activities and one effect of the loss of a species. (3)

SECTION D – Case-Based Questions (2 × 4 = 8 marks)

18 **Case Study: Body Plans of Invertebrates** **4**

A student compares some invertebrate phyla and records the following data.

Phylum	Habitat	Level of organisation	Opening(s) for food and waste
Porifera	Water (marine)	Cellular	Pores only
Cnidaria	Fresh and marine water	Tissue	One
Platyhelminthes	Water / inside host	Organ	One
Nematoda	Soil / water / inside host	Organ system	Two

(i) Which phylum shows organisation only up to the tissue level? (1)

(ii) Which phylum has a mouth and an anus, and in what way is this an advantage? (1)

(iii) State one limitation of having a single opening for food intake and waste removal. (1)

(iv) Flatworms are bilaterally symmetrical. How does this help them? (1)

19 Case Study: Hornbills of Pakke **4**

[Figure-based] The Pakke Tiger Reserve in Arunachal Pradesh has about 300 bird species, while India has about 1300. It supports four hornbill species, which nest only in large, old trees with suitable cavities and feed on specific fruits. A survey of three forest zones recorded hornbill nests per 10 hectares, as shown in Fig. 5 (illustrative data).

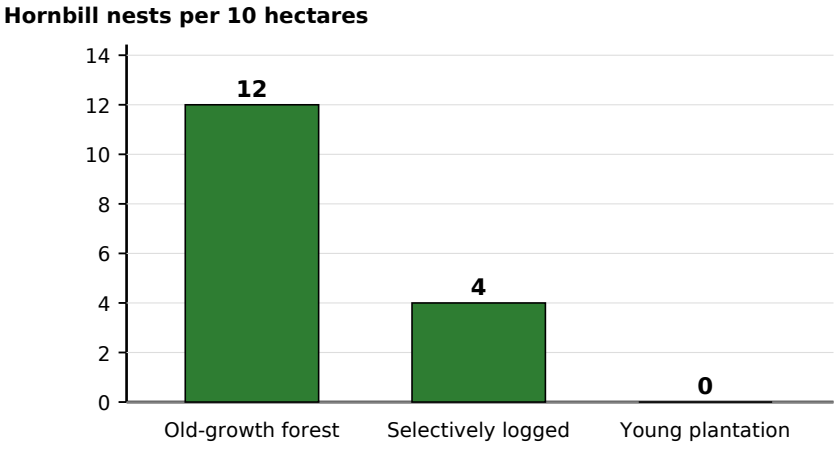


Fig. 5: Hornbill nests in three forest zones

(i) Which zone has the most nests? How many times as many nests does it have as the selectively logged zone? (1)

(ii) Suggest why no nests were recorded in the young plantation. (1)

(iii) What percentage of India’s bird species is found in Pakke (to the nearest whole number)? (1)

(iv) What may happen to the hornbills if the large, old trees disappear? (1)

SECTION E – Long Answer Question (1 × 5 = 5 marks)

20 **[Figure-based]** Fig. 6 shows a key used to place organisms into the five kingdoms. **5**
Attempt either option A or B.

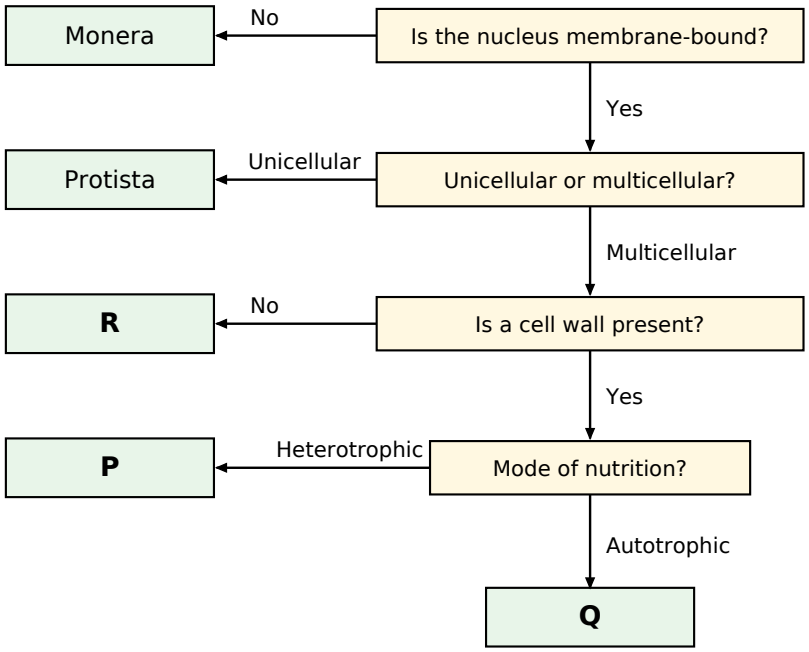


Fig. 6: A key to the five kingdoms

A.

(i) Name the kingdoms P, Q and R. (1)

(ii) Name the feature used to separate P from Q. (1)

(iii) Yeast is unicellular, yet it is placed in kingdom P. Give one reason. (1)

(iv) Name the material of the cell wall in P and in Q. (1)

(v) Bacteria and *Amoeba* are both unicellular. Why are they in different kingdoms? (1)

OR

B. The kingdom Plantae is divided into five classes.

(i) Name the five classes in order from simplest to most complex. (1)

(ii) Why are bryophytes called the ‘amphibians’ of the plant kingdom? (1)

(iii) State one difference between pteridophytes and gymnosperms. (1)

(iv) State one difference between the seeds of gymnosperms and angiosperms. (1)

(v) Name the tissues that carry water and food in the plant body. (1)

***** END OF QUESTION PAPER *****