

NCERT Exemplar Solutions of Class 11 Biology – Chapter: 4 – Animal Kingdom

MULTIPLE CHOICE QUESTIONS

1. In some animal groups, the body is found divided into compartments with a serial repetition of at least some organs. This characteristic feature is called

- a. Segmentation
- b. Metamerism
- c. Metagenesis
- d. Metamorphosis

Answer: (b) Metamerism

Explanation: Metamerism refers to the division of the body into segments or metameres, each containing similar structures. This is seen in annelids (earthworms), arthropods (insects, crustaceans), and chordates. Segmentation is a broader term, while metamerism specifically refers to the repetition of body segments with similar organ systems.

2. Given below are types of cells present in some animals. Which of the following cells can differentiate to perform different functions?

- a. Choanocytes
- b. Interstitial cells
- c. Gastrodermal cells
- d. Nematocytes

Answer: (b) Interstitial cells

Explanation: Interstitial cells are undifferentiated, totipotent cells found in cnidarians (like Hydra). They can differentiate into various cell types including nerve cells, reproductive cells, and nematocytes. This makes them crucial for regeneration and asexual reproduction in these organisms.

3. Which one of the following sets of animals shares a four-chambered heart?

- a. Amphibian, Reptiles, Birds
- b. Crocodiles, Birds, Mammals
- c. Crocodiles, Lizards, Turtles
- d. Lizards, Mammals, Birds

Answer: (b) Crocodiles, Birds, Mammals

Explanation: A four-chambered heart consists of two atria and two ventricles, providing complete separation of oxygenated and deoxygenated blood. Among reptiles, only crocodiles have a four-chambered heart. All birds and mammals possess four-chambered hearts, making this the most efficient circulatory system.

4. Which of the following pairs of animals has non-glandular skin?

- a. Snake and Frog
- b. Chameleon and Turtle

- c. Frog and Pigeon
- d. Crocodile and Tiger

Answer: (b) Chameleon and Turtle

Explanation: Non-glandular skin lacks mucus-secreting glands. Reptiles (chameleon, turtle, snake, crocodile) have dry, non-glandular skin covered with scales. Amphibians (frogs) have glandular skin that secretes mucus. Birds and mammals have various types of glands in their skin.

5. Birds and mammals share one of the following characteristics as a common feature.

- a. Pigmented skin
- b. Pneumatic bones
- c. Viviparity
- d. Warm-blooded

Answer: (d) Warm-blooded

Explanation: Both birds and mammals are endothermic (warm-blooded), meaning they can regulate their body temperature internally. Pneumatic bones are specific to birds, viviparity is mainly found in mammals (with some exceptions), and pigmented skin varies among species in both groups.

6. Which one of the following sets of animals belongs to a single taxonomic group?

- a. Cuttlefish, Jellyfish, Silverfish, Dogfish, Starfish
- b. Bat, Pigeon, Butterfly
- c. Monkey, Chimpanzee, Man
- d. Silkworm, Tapeworm, Earthworm

Answer: (c) Monkey, Chimpanzee, Man

Explanation: All three (monkey, chimpanzee, and human) belong to the order Primates within class Mammalia. The other options contain animals from different phyla or classes, despite similar names (the "fish" examples are from different groups entirely).

7. Which one of the following statements is incorrect?

- a. Mesoglea is present in between ectoderm and endoderm in Obelia
- b. Exhibits radial symmetry Asterias
- c. Fasciola is a pseudocoelomate animal
- d. Taenia is a triploblastic animal

Answer: (c) Fasciola is a pseudocoelomate animal

Explanation: Fasciola (liver fluke) belongs to Phylum Platyhelminthes, which are acoelomate animals (no body cavity). Pseudocoelomates have a body cavity not completely lined by mesoderm, found in Aschelminthes like Ascaris.

8. Which one of the following statements is incorrect?

- a. In cockroaches and prawns excretion of waste material occurs through malpighian tubules
- b. In ctenophores, locomotion is mediated by comb plates
- c. In Fasciola, flame cells help in excretion
- d. Earthworms are hermaphrodites and yet cross-fertilization takes place among them

Answer: (a) In cockroaches and prawns excretion of waste material occurs through malpighian tubules

Explanation: While cockroaches (arthropods) use malpighian tubules for excretion, prawns (also arthropods but aquatic) use gills and green glands (antennal glands) for excretion, not malpighian tubules.

9. Which one of the following is oviparous?

- a. Platypus
- b. Flying fox (Bat)
- c. Elephant
- d. Whale

Answer: (a) Platypus

Explanation: Platypus is a monotreme (egg-laying mammal). Despite being a mammal, it lays eggs instead of giving birth to live young. Flying fox, elephant, and whale are all viviparous mammals.

10. Which one of the following is a non-poisonous snake?

- a. Cobra
- b. Viper
- c. Python
- d. Krait

Answer: (c) Python

Explanation: Python is a non-venomous constrictor snake that kills prey by suffocation. Cobra, viper, and krait are all venomous snakes that inject poison through their fangs.

11. Match the following list of animals with their level of organisation.

Division of Labour

- A. Organ level
- B. Cellular aggregate level
- C. Tissue level
- D. Organ system level

Animals

- i. Pheretima
- ii. Fasciola
- iii. Spongilla
- iv. Obelia

Choose the correct match showing the division of labour with animal example.

- a. i-B, ii-C, iii-D, and iv-A
- b. i-B, ii-D, iii-C, and iv-A
- c. i-D, ii-A, iii-B, and iv-C
- d. i-A, ii-D, iii-C, and iv-B

Answer: (c) i-D, ii-A, iii-B, and iv-C

Explanation:

- Pheretima (earthworm) - Organ system level (complete digestive, circulatory, excretory systems)
- Fasciola (liver fluke) - Organ level (has organs but not complete organ systems)
- Spongilla (sponge) - Cellular aggregate level (collection of cells with minimal organization)
- Obelia (cnidarian) - Tissue level (has distinct tissue layers)

12. The body cavity is the cavity present between the body wall and the gut wall. In some animals, the body cavity is not lined by mesoderm. Such animals are called

- a. Acoelomates
- b. Pseudocoelomates
- c. Coelomates
- d. Haemocoelomates

Answer: (b) Pseudocoelomates

Explanation: Pseudocoelomates have a body cavity (pseudocoel) that is not completely lined by mesoderm. The cavity lies between the mesoderm of the body wall and the endoderm of the gut wall. Examples include Aschelminthes like Ascaris.

13. Match the column A with column B and choose the correct option

Column I

- A. Porifera
- B. Aschelminthes
- C. Annelida
- D. Arthropoda
- E. Echinodermata

Column II

- i. Canal system
- ii. Water-vascular system
- iii. Muscular pharynx
- iv. Jointed appendages
- v. Metameres

- a. A-ii, B-iii, C-v, D-iv, E-i
- b. A-ii, B-v, C-iii, D-iv, E-i

c. A-i, B-iii, C-v, D-iv, E-ii

d. A-i, B-v, C-iii, D-iv, E-ii

Answer: (c) A-i, B-iii, C-v, D-iv, E-ii

Explanation:

- Porifera - Canal system (water circulation system in sponges)
- Aschelminthes - Muscular pharynx (for feeding in roundworms)
- Annelida - Metameres (segmented body)
- Arthropoda - Jointed appendages (characteristic feature)
- Echinodermata - Water-vascular system (unique hydraulic system)



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