6. DIVERSITY IN ANIMALS

TEACHING TASK
Single Correct Answer Questions

1. Who classified organisms in five kingdom system?
(A) Whittaker
(B) Pliny
(C) Aristotle
(D) Linnaeus

Answer: (A) Whittaker
Explanation: R.H. Whittaker proposed the five-kingdom classification system in 1969, dividing organisms into Monera, Protista, Fungi, Plantae, and Animalia.

2. Which group of animals has cell aggregate body plan?
(A) Sponges
(B) Platyhelminthes
(C) Nematodes
(D) Annelids

Answer: (A) Sponges
Explanation: Sponges (Porifera) have a loose cell aggregate organization without true tissues.

3. Organ system grade of body organization is found in:
(A) Sponges
(B) Protozoa
(C) Arthropods
(D) Platyhelminthes

Answer: (C) Arthropods
Explanation: Arthropods show the highest organ system level of organization among these options.

4. Which is incorrectly matched?
(A) Porifera - Sycon
(B) Coelenterata - Hydra
(C) Platyhelminthes - Fasciola
(D) Nematoda - Taenia solium

Answer: (D) Nematoda - Taenia solium
Explanation: Taenia solium is a flatworm (Platyhelminthes), not a roundworm (Nematoda).

5. Stinging cell organelles (nematocysts) are found only in:

(A) Phylum Coelenterata
(B) Phylum Porifera
(C) Phylum Echinodermata
(D) Phylum Arthropoda

Answer: (A) Phylum Coelenterata
Explanation: Nematocysts are characteristic of cnidarians (Coelenterata).

6. In which phylum is pseudocoelom present?
(A) Coelenterata
(B) Annelida
(C) Aschelminthes
(D) Mollusca

Answer: (C) Aschelminthes
Explanation: Nematodes/Aschelminthes have a pseudocoelom (false body cavity).

7. Flatworms are found in:
(A) Phylum Nematoda
(B) Phylum Annelida
(C) Phylum Platyhelminthes
(D) Phylum Echinodermata

Answer: (C) Phylum Platyhelminthes
Explanation: Flatworms belong to Platyhelminthes (e.g., tapeworms, flukes).

8. Starfish is a member of:
(A) Pisces
(B) Mollusca
(C) Coelenterata
(D) Echinodermata

Answer: (D) Echinodermata
Explanation: Starfish are marine invertebrates with radial symmetry, belonging to Echinodermata.

9. Balanoglossus is an example of:
(A) Urochordata
(B) Cephalochordata
(C) Hemichordata
(D) Vertebrata

Answer: (C) Hemichordata
Explanation: Balanoglossus is a hemichordate (acorn worm), showing both invertebrate and chordate features.

10. Which is not a bony fish?
(A) Labeo rohita
(B) Anabas
(C) Hippocampus
(D) Chimera

Answer: (D) Chimera
Explanation: Chimera is a cartilaginous fish (Chondrichthyes), while others are bony fishes (Osteichthyes).

11. Which statement is incorrect for amphibians?
(A) First vertebrates to come out of water
(B) Cold-blooded animals
(C) No scales on skin
(D) Two-chambered heart

Answer: (D) Two-chambered heart
Explanation: Adult amphibians have three-chambered hearts (2 atria + 1 ventricle).

12. Which class includes snakes and lizards?
(A) Amphibia
(B) Reptilia
(C) Mammalia
(D) Pisces

Answer: (B) Reptilia
Explanation: Snakes and lizards are reptiles, characterized by scaly skin and ectothermy.

13. In which class are birds included?
(A) Amphibia
(B) Pisces
(C) Reptilia
(D) Aves

Answer: (D) Aves
Explanation: Birds constitute their own class (Aves), though evolutionarily related to reptiles.

14. Sound-producing organ in birds is:
(A) Trachea
(B) Pneumatic bones
(C) Syrinx
(D) Plumage

Answer: (C) Syrinx

Explanation: The syrinx is the avian vocal organ located at the trachea's base.

15. Which statement(s) is/are true for mammals?
(A) Warm-blooded
(B) Have diaphragm
(C) Have mammary glands
(D) All of the above

Answer: (D) All of the above
Explanation: Mammals are endothermic, have diaphragms for breathing, and nurse young with milk.

LEARNERS TASK

Single Correct Answer Questions

1. In Earthworm the body is divisible into:
(A) 30-35 segments
(B) 70-75 segments
(C) 90-100 segments
(D) 100-120 segments

Answer: (C) 90-100 segments
Explanation: The common earthworm (Pheretima posthuma) typically has 100 segments, while other species range between 90-120 segments.

2. Earthworm has an unsegmented band called:
(A) Clitellum
(B) Cephalothorax
(C) Thorax
(D) Metathorax

Answer: (A) Clitellum
Explanation: The clitellum is a smooth, glandular, non-segmented band crucial for reproduction.

3. Clitellum occurs in segments:
(A) 8-10
(B) 10-12
(C) 14-16
(D) 16-18

Answer: (C) 14-16
Explanation: In Pheretima, the clitellum covers segments 14-16.

4. Setae occur all over the body except segments:
(A) First
(B) Last
(C) Clitellar

(D) All the above

Answer: (D) All the above
Explanation: Setae are absent from the first segment (peristomium), last segment (pygidium), and clitellar region.

5. Earthworm belongs to phylum:
(A) Annelida
(B) Arthropoda
(C) Nematoda
(D) Mollusca

Answer: (A) Annelida
Explanation: Earthworms show metameric segmentation, a key annelid characteristic.

6. Earthworm has characteristic of Annelida:
(A) True coelom
(B) Metameric segmentation
(C) Both A and B
(D) Open circulatory system

Answer: (C) Both A and B
Explanation: Annelids have both true coelom and metamerism (unlike arthropods with open circulation).

7. Cockroach has a pair of long jointed thread-like appendages over the head:
(A) Antennae
(B) Anal styles
(C) Anal cerci
(D) Prolegs

Answer: (A) Antennae
Explanation: Antennae are sensory organs located on the head.

8. Male cockroach can be distinguished by:
(A) Anal cerci
(B) Anal styles
(C) No wings
(D) Spiracles

Answer: (B) Anal styles
Explanation: Males have an extra pair of small, unjointed anal styles (absent in females).

9. Mouthparts of Cockroach are of type:

(A) Biting and chewing
(B) Piercing and sucking
(C) Siphoning
(D) Sponging

Answer: (A) Biting and chewing
Explanation: Cockroaches have mandibles for crushing food.

10. Cockroach is:
(A) Carnivorous
(B) Herbivorous
(C) Omnivorous
(D) Saprophagous

Answer: (C) Omnivorous
Explanation: They eat both plant and animal matter, including decaying material.

11. Major characteristics of arthropods:
(A) Jointed appendages and chitinous exoskeleton
(B) Jointed appendages and chitinous endoskeleton
(C) Antennae and cephalothorax
(D) Eyes and cephalothorax

Answer: (A) Jointed appendages and chitinous exoskeleton
Explanation: These are defining features of arthropods.

12. Bony fish stay at depth due to:
(A) Air bladder
(B) Lungs
(C) Gills
(D) Powerful tail

Answer: (A) Air bladder
Explanation: The swim bladder regulates buoyancy.

13. Gills in bony fish are covered by:
(A) Scales
(B) Operculum
(C) Fins
(D) Skin

Answer: (B) Operculum
Explanation: A bony flap protecting gills (absent in cartilaginous fish).

14. Fins help fish in:
(A) Locomotion
(B) Steering

(C) Both A and B
(D) None

Answer: (C) Both A and B
Explanation: Different fins serve propulsion (caudal) and stability (dorsal/ pectoral).

15. Important chordate character:
(A) Dorsal notochord
(B) Dorsal hollow nerve cord
(C) Post-anal tail
(D) All the above

Answer: (D) All the above
Explanation: These four features define chordates (plus pharyngeal slits).

16. Bird body covering:
(A) Dermal scales
(B) Feathers
(C) Hair
(D) Both B and C

Answer: (B) Feathers
Explanation: Unique avian feature (though legs may have scales).

17. Flight adaptation in birds:
(A) Streamlined body
(B) Feathery covering
(C) Wings
(D) All the above

Answer: (D) All the above
Explanation: All contribute to flight efficiency.

18. Number of teeth in bird beak:
(A) Several
(B) 20
(C) 10
(D) Nil

Answer: (D) Nil
Explanation: Modern birds lack teeth (though ancestors had them).

19. Birds keep weight low via:
(A) Streamlined body
(B) Pneumatic bones
(C) Small tail

(D) Enclosing air in feathers

Answer: (B) Pneumatic bones
Explanation: Hollow, air-filled bones reduce weight.

20. Earthworm is used in:
(A) Metabolizing nitrogenous wastes
(B) Composting organic matter
(C) Ploughing soil
(D) Both B and C

Answer: (D) Both B and C
Explanation: Vermicomposting and soil aeration are key uses.

Matrix Matching Answers

Column I	**Column II**
(i) Flightless bird	(e) Ostrich
(ii) Egg-laying mammal	(i) Duckbilled platypus
(iii) Hydra	(o) Freshwater coelenterate
(iv) Cnidoblasts	(k) Coelenterates
(v) Pseudocoel	(l) Roundworms
(vi) Ascaris	(d) Endoparasite of intestine
(vii) Sea urchin	(a) Echinoderm
(viii) Jawless vertebrate	(g) Lamprey
(ix) Limbless reptile	(b) Snake
(x) Cartilage fish	(h) Shark
(xi) Leech	(n) Hirudin
(xii) Millipedes	(m) Segmented arthropods
(xiii) Nephridia	(f) Earthworm
(xiv) Pneumatic bones	(c) Birds
(xv) Pouched mammal	(j) Kangaroo

Note: The matrix should be bubbled as per the matching pairs shown above (e.g., i-e, ii-i, iii-o, etc.). Each correct match corresponds to one mark in examinations.