

3. CLASSIFICATION OF ANIMALS

TEACHING TASK

Multiple Choice Questions

1. Which invertebrate group typically has a hard shell protecting its soft body?
A) Arachnids B) Mollusks C) Annelids D) Echinoderms

Key: B

Solution: Mollusks (like snails, clams, oysters) have soft bodies protected by hard shells.

2. Annelids are characterized by being:
A) Soft-bodied with hard shells B) Segmented worms
C) Animals with stinging cells D) Marine organisms

Key: B

Solution: Annelids (earthworms, leeches) have segmented worm-like bodies.

3. Which group of invertebrates is known for having stinging cells?
A) Insects B) Arachnids C) Mollusks D) Cnidarians

Key: D

Solution: Cnidarians (jellyfish, corals) have special stinging cells called cnidocytes.

4. Which of the following is a defining characteristic of vertebrates?
A) Fur or feathers B) Backbone or spine made of vertebrae
C) Exoskeleton D) Slimy skin

Key: B

Solution: All vertebrates have a backbone or spinal column.

5. Which group of animals is not classified as a vertebrate?
A) Mammals B) Invertebrates C) Birds D) Fish

Key: B

Solution: Invertebrates lack a backbone, so they are not vertebrates.

6. How many main groups are vertebrates classified into?
A) Three B) Four C) Five D) Six

Key: C

Solution: Vertebrates are divided into 5 groups: Fish, Amphibians, Reptiles, Birds, and Mammals.

ADVANCED LEVEL

(i) More than One Answer Type

7. Which characteristics describe insects? (Select all that apply)
A) They have a backbone or spine. B) They have three body segments.
C) They have six legs. D) They have wings.

Key: B, C, D

Solution: Insects have 3 body parts (head, thorax, abdomen), 6 legs, and many have wings.

8. Which of the following statements about vertebrates are true? (Select all that apply)
A) Vertebrates have a backbone or spine made of vertebrae.
B) Vertebrates tend to have simpler body structures.

C) Vertebrates often possess well-developed sensory organs.

D) Vertebrates are classified into three main groups.

Key: A, C

Solution: Vertebrates are advanced animals with a backbone and complex organs.

(ii) Fill In the Blanks

9. _____ have spiny skin, typically found in marine environments.

Key: Echinoderms

10. Vertebrates are animals that have a _____ or spine made of vertebrae.

Key: Backbone

(iii) Matching Type

s.no	Column I	Column II
1.	Insects	A. Have soft bodies, often protected by a hard shell, including snails, clams, octopuses, and squids.
2.	Mollusks	B. Have spiny skin, typically found in marine environments, examples include starfish, sea urchins, and sea cucumbers.
3.	Echinoderms	C. Largest group of invertebrates, with three body segments and six legs.

Key: C, A, B

(iv) Answer the Following Questions

12. What are vertebrates and give its classification

Answer:

Vertebrates are animals that have a backbone or spinal column.

They are classified into five main groups:

1. Pisces (Fishes)
2. Amphibia (Amphibians)
3. Reptilia (Reptiles)
4. Aves (Birds)
5. Mammalia (Mammals)

13. Explain about classification of invertebrates

Answer:

Invertebrates are animals without a backbone. They are classified into groups such as:

1. Porifera – Sponges
2. Cnidaria – Jellyfish, corals
3. Platyhelminthes – Flatworms
4. Nematoda – Roundworms
5. Annelida – Earthworms, leeches
6. Mollusca – Snails, squids
7. Arthropoda – Insects, spiders, crabs
8. Echinodermata – Starfish, sea urchins

LEARNER'S TASK

Multiple Choice Questions

1. Which of the following is an example of an insect?

- A) Spider B) Earthworm C) Ant D) Starfish

Key: C

Solution: An ant is an insect because it has 3 body parts (head, thorax, abdomen) and 6 legs.

2. Arachnids have how many body segments?

- A) One B) Two C) Three D) Four

Key: B

Solution: Arachnids (e.g., spiders, scorpions) have two body segments – the cephalothorax and abdomen.

3. Echinoderms are primarily found in which environment?

- A) Freshwater B) Deserts C) Rainforests D) Marine

Key: D

Solution: Echinoderms (like starfish and sea urchins) are found in marine environments.

4. Which of the following animals have a backbone or spine made of vertebrae?

- A) Invertebrates B) Vertebrates C) Amphibians D) Mammals

Key: B

Solution: Vertebrates are animals with a backbone or spine.

5. What is the main distinguishing feature of vertebrates?

- A) They lay eggs
B) They have fur or feathers
C) They possess a backbone or spine made of vertebrae
D) They have gills for breathing

Key: C

Solution: The defining feature of vertebrates is that they possess a backbone or spine made of vertebrae.

ADVANCED LEVEL

(i) More than One Answer Type

6. Which of the following are examples of insects? (Select all that apply)

- A) Spider B) Ant C) Butterfly D) Earthworm

Key: B, C

Solution: Ant and Butterfly are insects.

Spider = arachnid

Earthworm = annelid

7. Which of the following are classified as vertebrates? (Select all that apply)

- A) Insects B) Dolphins C) Snakes D) Crabs

Key: B, C

Solution: Dolphins (mammals) and Snakes (reptiles) are vertebrates.

Insects = invertebrates

Crabs = invertebrates

(ii) Fill In the Blanks

8. _____ have soft bodies, often protected by a hard shell.

Key: Molluscs

9. Vertebrates are classified into _____ main groups

Key: Five

(iii) Matching Type

10.

s.no	Column I	Column II
1.	Arachnids	A. Spider
2.	Annelids	B. Ant
3.	Insects	C. Earthworm

Key: A, C, B

Answer the Following Questions

11. Explain about Insects

Solution: Insects belong to the phylum Arthropoda and are characterized by having three pairs of legs (six legs), a body divided into three parts (head, thorax, and abdomen), and typically one or two pairs of wings. They also have a pair of antennae and an exoskeleton made of chitin. Examples include ants, bees, and beetles.

12. Explain about Vertebrates

Solution: Vertebrates are animals with a backbone or spinal column, which is part of an internal skeleton (endoskeleton). They belong to the subphylum Vertebrata and include fish, amphibians, reptiles, birds, and mammals. Key features include a well-developed brain protected by a skull, a closed circulatory system, and advanced organ systems.

TEACHING TASK

Multiple Choice Questions

1. Which of the following characteristics is NOT true about fish?

- A) Fish primarily live in water. B) Fish breathe through lungs.
C) Fish have streamlined bodies. D) Fish are ectothermic (cold-blooded).

Key: B

Solution: Fish breathe through gills, not lungs. They are aquatic, have streamlined bodies, and are cold-blooded.

2. Which of the following is a reproductive method seen in fish?

- A) Internal fertilization only
B) Laying eggs (oviparous) only
C) Giving birth to live young (viviparous) only
D) Both laying eggs (oviparous) and giving birth to live young (viviparous)

Key: D

Solution: Most fish are oviparous (egg-laying), while some (like sharks, guppies) are viviparous (live-bearing).

3. How do reptiles breathe?

- A) Through gills
- C) Through their skin

- B) Through lungs
- D) Through spiracles

Key: B

Solution: Reptiles breathe only through lungs throughout their life.

4. What characteristic of reptile skin helps prevent water loss?
- A) Moist and slimy texture
 - C) Thin and smooth surface
 - B) Dry, scaly skin
 - D) Thick fur

Key: B

Solution: Reptiles have dry, scaly skin that reduces water loss and protects them in dry environments.

5. How do amphibians typically breathe during their larval stage?
- A) Through lungs
 - C) Through skin only
 - B) Through gills
 - D) Through spiracles

Key: B

Solution: Tadpoles (larvae) breathe through gills; as they mature, they develop lungs and skin respiration.

6. Which characteristic is true about the skin of amphibians?
- A) It is dry and scaly
 - B) It is moist and permeable, aiding in respiration
 - C) It is covered with feathers
 - D) It must be kept dry to function properly

Key: B

Solution: Amphibian skin is moist and permeable, which helps in cutaneous respiration (breathing through skin).

ADVANCED LEVEL

(i) More than One Answer Type

7. Which of the following statements about reptile habitats are correct? (Select all that apply)
- A) Reptiles can only be found in terrestrial environments.
 - B) Reptiles can be found in freshwater environments.
 - C) Reptiles can be found in marine environments.
 - D) Reptiles can live exclusively in the air.

Key: B, C

Solution: Reptiles live mostly on land, but some (like crocodiles, turtles, sea snakes) are found in freshwater and marine environments too. They cannot live in the air.

8. Which of the following characteristics apply to amphibians? (Choose all that apply)
- A) They lay eggs on land in nests.
 - B) They are ectothermic.
 - C) They have legs adapted for jumping, swimming, or crawling.
 - D) They have dry, impermeable skin.

Key: B, C

Solution: Amphibians are ectothermic and have legs adapted for jumping, swimming, or crawling. They do not lay eggs on land, and their skin is moist and permeable, not dry.

(ii) Fill In the Blanks

9. Most fish lay eggs, a reproductive method known as _____, though some give birth to live young, a method known as _____.

Key: oviparous, viviparous

10. _____ have a dry scaly skin that prevents water loss and provides protection.

Key: Reptiles

(iii) Matching Type

Match the characteristics of fish with their descriptions:

s.no	Column I	Column II
1.	Aquatic Life	A. breathe through gills, which extract oxygen from water.
2.	Respiration	B. primarily live in water, either freshwater or saltwater.
3.	Body Structure	C. usually covered with scales and a layer of mucus
4.	Skin	D. have streamlined bodies, which reduce water resistance and aid in swimming.

(iv) Answer the Following Questions

12. What covers the skin of most fish, providing protection and reducing friction?
13. Describe the reproductive strategy of amphibians, including where most lay their eggs and the two possible methods of fertilization.

LEARNER'S TASK

Multiple Choice Questions

1. How do fish primarily respire?
A) Through lungs
B) Through gills
C) Through skin
D) Through mouth

Key: B

Solution: Fish use gills to extract dissolved oxygen from water.

2. What feature of fish skin helps reduce friction in water?
A) Fins
B) Scales and a layer of mucus
C) Streamlined body
D) Cold-blooded nature

Key: B

Solution: Scales and a layer of mucus make the body slippery, reducing friction.

3. Which of the following environments can reptiles be found in?
A) Terrestrial
B) Freshwater
C) Marine
D) All of the above

Key: D

Solution: Reptiles inhabit terrestrial, freshwater, and marine environments.

4. Which of the following is NOT true about reptile reproduction?
- A) Most reptiles lay shelled eggs on land.
 - B) All reptiles give birth to live young.
 - C) Fertilization is internal.
 - D) Some reptiles are ovoviviparous or viviparous.

Key: B

Solution: Not all reptiles give birth to live young. Most lay eggs, though some are ovoviviparous or viviparous.

5. Where do most amphibians lay their eggs?
- A) On land in nests
 - B) In trees
 - C) In water
 - D) Inside their bodies

Key: C

Solution: Amphibians usually lay soft, jelly-like eggs in water.

ADVANCED LEVEL

(i) More than One Answer Type

6. Which of the following are characteristics of fish skin? (Select all that apply)
- A) Covered with scales.
 - B) Covered with feathers.
 - C) Has a layer of mucus.
 - D) Reduces friction in water

Key: A, C, D

Solution: Fish skin is covered with scales, has a mucus coating, and reduces friction in water. Feathers are absent.

7. Which of the following statements about fish respiration are true? (Select all that apply)
- A) Fish breathe through gills.
 - B) Fish breathe through lungs.
 - C) Gills extract oxygen from water.
 - D) Fish breathe through their skin.

Key: A, C

Solution: Fish breathe through gills, which extract oxygen from water. They do not use lungs or skin for respiration.

(ii) Fill In the Blanks

8. Fish breathe through _____, which extract oxygen from water.

Key: gills

9. Amphibians are _____-blooded, and their body temperature changes with the environment.

Key: cold

(iii) Matching Type

s.no	Column I	Column II
1.	Oviparous	A. ectothermic and rely on external heat sources to regulate their body temperature
2.	Viviparous	B. lay shelled eggs on land
3.	Cold-blooded	C. give birth to live young

Key: B, C, A

(iv) Answer the Following Questions

11. What is the body structure of fish that helps them move efficiently through water?

Answer: The body structure of fish that helps them move efficiently through water is their **streamlined (fusiform) shape**. This shape reduces drag and allows them to swim with minimal resistance. Additionally, features like fins (for stability and propulsion) and a **mucus-covered layer of scales** (to reduce friction) further enhance their movement in water.

12. What are the two main respiratory organs used by amphibians throughout their life cycle, and how do they change as they develop?

Answer: The two main respiratory organs used by amphibians are gills and **lungs/skin**.

1. Larval Stage (e.g., tadpoles): Amphibians primarily use gills to extract oxygen from water.

2. Adult Stage: After metamorphosis, most amphibians develop lungs for breathing air. Additionally, their moist, permeable skin (cutaneous respiration) remains a critical respiratory organ, allowing them to absorb oxygen directly from the environment (water or air).

How they change:

Amphibians undergo a transition from aquatic respiration (gills) as larvae to a combination of pulmonary (lungs) and cutaneous (skin) respiration as adults. This adaptation supports their dual life in water and on land.

Example: Frogs lose their gills during metamorphosis and rely on lungs and skin as adults.

TEACHING TASK

Multiple Choice Questions

1. What covers the bodies of birds, helping them to fly and stay warm?
A) Fur B) Feathers C) Scales D) Spines

Key: B

Solution: Birds are covered with feathers, which aid in flight and help maintain body temperature.

2. Instead of teeth, what do birds have for eating?
A) Claws B) Beaks C) Fangs D) Antennae

Key: B

Solution: Birds have beaks that are adapted to their feeding habits.

3. What are the specialized organs that female birds use to incubate and hatch their eggs?
A) Gills B) Pouches C) Mammary glands D) Nests

Key: D

Solution: Birds build nests to incubate and protect their eggs until they hatch.

4. Which of the following is NOT a characteristic of mammals?
A) Cold-blooded B) Live birth
C) Fur or hair covering D) Mammary glands

Key: A

Solution: Mammals are warm-blooded, not cold-blooded. They also give live birth, have fur/hair, and mammary glands.

5. How do mammals regulate their body temperature?
 A) By absorbing sunlight B) By panting
 C) By hibernating D) Internally, as they are warm-blooded

Key: D

Solution: Mammals are warm-blooded, regulating temperature internally regardless of external conditions.

6. What is the primary function of fur or hair in mammals?
 A) To aid in swimming B) To camouflage from predators
 C) To regulate body temperature D) To store food

Key: C

Solution: Fur/hair helps regulate body temperature by providing insulation.

ADVANCED LEVEL

(i) More than One Answer Type

7. Which of the following are functions of feathers in birds?
 A) Helping them fly B) Keeping them warm
 C) Helping them walk D) Providing camouflage

Key: A, B, D

Solution: Feathers help in flying, keeping warm, and camouflage. They do not help in walking.

8. What functions do mammalian teeth serve?
 A) Cutting B) Regulating body temperature
 C) Tearing D) Grinding food

Key: A, C, D
 Solution: Mammalian teeth are specialized for cutting, tearing, and grinding food.

(ii) Fill In the Blanks

9. Most birds have _____ bones, which make them lightweight for flying.

Key: hollow

10. Female mammals produce milk to feed their young through specialized organs called _____.

Key: mammary glands.

(iii) Matching Type

Match the characteristic with its description

s.no	Column I	Column II
1.	Beaks	A. hard-shelled
2.	Egg-laying	B. regulate their body temperature internally
3.	Warm-blooded	C. adapted for different feeding habits

Key: C, A, B

Answer the Following Questions

12. How do birds reproduce, and what happens to the eggs after they are laid?

Answer: Birds reproduce by laying hard-shelled eggs. After the eggs are laid, the

13. How do mammals differ from reptiles and amphibians regarding body temperature regulation?

LEARNER'S TASK

ADVANCED LEVEL

(i) More than One Answer Type

6. Which of the following statements are true about bird beaks?
- A) Beaks are used for chewing food.
 - B) Different types of beaks are adapted for various feeding habits.
 - C) Beaks are made of solid bone.
 - D) Beaks can be used for cracking nuts.

Key: B, D

Solution: Bird beaks are adapted to feeding habits (e.g., cracking nuts, catching fish). They do not chew like teeth, nor are they solid bone.

7. Which of the following are characteristics of mammals?
- A) Fur or hair covering
 - B) Lay eggs
 - C) Warm-blooded
 - D) Have mammary glands

Key: A, C, D

Solution: Mammals have fur/hair, are warm-blooded, and have mammary glands. Some mammals lay eggs (like platypus), but most give live birth.

(ii) Fill In the Blanks

8. _____ help birds to keep them warm.

Key: Feathers

9. Mammals are _____ blooded animals

Key: warm

(iii) Matching Type

Match the mammalian characteristic with its description

10.

s.no	Column I	Column II
1.	Fur or Hair	A. cutting, tearing, or grinding food
2.	Warm-blooded	B. helps them stay warm
3.	Differentiated Teeth	C. regulate their body temperature internally

Key: B, C, A

(iv) Answer the Following Questions

11. What characteristic of birds allows them to regulate their body temperature internally, and why is this beneficial?

Answer: Birds have feathers and are warm-blooded (endothermic), allowing them to regulate body temperature internally. This is beneficial because it enables survival in diverse environments, regardless of external conditions.

12. What is a unique characteristic of mammals in terms of their reproductive method compared to other animal groups?

Answer: A unique characteristic of mammals is that most give live birth and feed their young with milk from mammary glands, unlike reptiles and amphibians which lay eggs without this level of parental care.