10 Living Creatures – Exploring Their Characteristics

Section A – Multiple Choice Questions

1. Which of the following is not a characteristic of living things?
   a) Growth ☐ c) Movement ☐
   b) Reproduction ☐ d) Cutting ☐
2. Which of the following is an excretory product in humans?
   a) Oxygen ☐ c) Starch ☐
   b) Carbon dioxide ☐ d) Glucose ☐
3. A jelly-like cluster of frog eggs is called:
   a) Spawn ☐ c) Tadpole ☐
   b) Pupa ☐ d) Larva ☐
4. Which stage of the silk moth secretes silk threads?
   a) Egg ☐ c) Larva (caterpillar) ☐
   b) Pupa ☐ d) Adult ☐
5. The fibres used to make silk fabric are obtained from the:
   a) Egg ☐ c) Larva ☐
   b) Cocoon ☐ d) Adult moth ☐
6. Which animal breathes through its skin as well as lungs?
   a) Frog ☐ c) Cat ☐
   b) Fish ☐ d) Snake ☐
7. Which organism reproduces asexually?
   a) Human ☐ c) Frog ☐
   b) Hydra ☐ d) Dog ☐
8. What did Jagadish Chandra Bose use to study how plants respond to stimuli?
   a) Microscope ☐ c) Telescope ☐
   b) Crescograph ☐ d) Thermometer ☐
9. Which organization has set up silk production centres in India?
   a) ISRO ☐ c) KVIC ☐
   b) DRDO ☐ d) ICAR ☐

Section B – Fill in the Blanks.

1. All living beings need _____ to survive.
2. Tadpoles use _____ to breathe.
3. The organ in humans responsible for pumping blood is the _____.
4. The stage of a frog before hatching from an egg is called _____.
5. Shoots of plants grow towards _____ while roots grow towards _____.
6. Jagadish Chandra Bose showed that plants can sense and respond to _____.
7. The silk fibres are obtained from the cocoon of the silkworm.
8. Movement in plants can be seen in the _____ plant closing its leaves.
9. In _____, plants use sunlight, carbon dioxide, and water to make food.
10. The lifespan of an adult mosquito is about _____.

Section C – True or False.

1. All living things can reproduce. ☐
2. Germination occurs in seeds without water. ☐
3. All living things can move from one place to another. ☐
4. Amoeba reproduces by budding. ☐
5. Animals excrete waste products through various organs. ☐
6. Plants do not need air to germinate. ☐
7. A mosquito goes through three stages in its life cycle. ☐
8. Living beings respond to stimuli. ☐
9. Tadpoles swim using their tails. ☐
10. Mosquito larvae come to the water surface to breathe. ☐

Section D – One Word Answer.

1. Name the process by which plants prepare food. :- _____
2. Name the tiny pores on leaves that help in gas exchange and excreting excess water. :- _____
3. Removal of waste from living beings. :- _____
4. Name the organ of respiration in fish. :- _____
5. Name the protective covering of a seed. :- _____
6. Food for growth and development of living beings. :- _____
7. Name the life cycle stage between tadpole and adult frog. :- _____

Section E – Match the Following.

Column A	Column B	Ans.
1. Drosera	i. Breathing	1. ____
2. Urine	ii. Insectivorous plant	2. ____
3. Inhale and exhale of air	iii. Energy source	3. ____
4. Jagadish Chandra Bose	iv. Excretion	4. ____
5. Sunlight	v. Indian scientist who studied plants	5. ____

Section F – Give Two Examples.

1. Give two examples of animals that breathe through gills.

   _____ _____

2. Give two examples of plants that require light for germination.

   _____ _____

3. Give two examples of insectivorous plants.

   _____ _____

4. Give two examples of animals that undergo metamorphosis.

   _____ _____

5. Give two examples of mosquito-borne diseases.

   _____ _____

6. Give two examples of seeds that germinate in darkness.

   _____ _____

Section G – Short Answer Questions.

1. List any three characteristics of living things.

   Ans. _____

   _____

2. How do plants show response to stimuli? Give one example.

   Ans. _____

   _____

3. What is the role of the heart in humans?

   Ans. _____

   _____

4. Why is reproduction important for living organisms?

   Ans. _____

   _____

5. How does an amoeba move?

   Ans. _____

   _____

6. What is the difference between excretion in animals and plants?

   Ans. _____

   _____

7. What is the difference between aerobic and anaerobic respiration?

   Ans. _____

   _____

8. How do camouflaging animals protect themselves?

   Ans. _____

   _____

9. What is metamorphosis? Give one example.

   Ans. _____

   _____

10. Write two ways in which humans respond to their environment.

    Ans. _____

    _____

Section H – Long Answer Questions.

1. Explain the seven life processes of living beings with examples.

   Ans. _____

   _____

   _____

   _____

2. Differentiate between movement in plants and animals with two examples.

   Ans. _____

   _____

   _____

   _____

3. Describe the life cycle of a silk moth.

   Ans. _____

   _____

   _____

   _____

4. How do adaptations help animals and plants survive in their environment?

   Ans. _____

   _____

   _____

   _____

5. Explain how living organisms are classified based on their characteristics.

   Ans. _____

   _____

   _____

   _____

Section I – Give Reasons.

1. Seeds of Calendula and Zinnia must be covered with soil for germination.

   Ans. _____

   _____

2. Camouflage helps animals to survive in the wild.

   Ans. _____

   _____

3. Excretion is considered a vital life process.

   Ans. _____

   _____

4. Plants without leaves cannot prepare their own food.

   Ans. _____

   _____

5. Amoeba cannot survive without water.

   Ans. _____

   _____

Section J – Case Study.

The Life Cycle of a Butterfly

A butterfly begins its life as an egg, usually laid on the leaves of a plant. After a few days, the egg hatches into a larva, commonly known as a caterpillar. The caterpillar feeds on leaves, grows rapidly, and sheds its skin several times. Once it has grown enough, it forms a pupa or chrysalis, inside which it undergoes a transformation called metamorphosis. During this stage, the caterpillar's body reorganizes into a butterfly. Finally, the adult butterfly emerges, with wings ready for flying, feeding on nectar, and reproducing to continue the life cycle.

Questions:

1. Explain the following terms:

   (a) Egg:- _____

   (b) Larva :- _____

   (c) Pupa :- _____

   (d) Adult Butterfly:- _____
2. What is the function of the caterpillar stage?

   Ans. _____

   _____
3. What is the function of the pupa stage?

   Ans. _____

   _____
4. Complete the sequence:

   Egg → _____ → _____ → _____ → Adult Butterfly
5. Why is the larva stage important for the survival of the butterfly?

   Ans. _____

   _____

Section K – Assertion–Reason Questions.

1. Assertion (A): All living beings share the characteristic to show movement.

   Reason (R): Movement is one of the similarities between living beings and non-living things.

   Ans. _____
2. Assertion (A): The presence of light is not essential for the germination of seeds.

   Reason (R): Sunlight softens the seed coat and helps the embryo grow.

   Ans. _____

3. Assertion (A): Plants show differential growth of root and shoot in sunlight.

   Reason (R): Shoots grow upwards and roots grow downwards.

   Ans. _____

4. Assertion (A): Stagnant water in coolers and pots helps mosquitoes breed.

   Reason (R): Female mosquitoes transmit malaria and dengue.

   Ans. _____

5. Assertion (A): A seed is germinated if it turns into a sprout.

   Reason (R): Germination does not require water, air, and light.

   Ans. _____

Answer

Section A – Multiple Choice Questions (Answers)

1. d) Cutting
2. b) Carbon dioxide
3. a) Spawn
4. c) Larva (caterpillar)
5. b) Cocoon
6. a) Frog
7. b) Hydra
8. b) Crescograph
9. c) KVIC

Section B – Fill in the Blanks (Answers)

1. Food
2. Gills
3. Heart
4. Embryo
5. Light, Soil
6. Stimuli
7. Cocoon
8. Touch-me-not
9. Photosynthesis
10. 2–4 weeks

Section C – True or False (Answers)

1. True
2. False
3. False
4. False
5. True
6. False
7. True
8. True
9. True
10. True

Section D – One Word Answer (Answers)

1. Photosynthesis
2. Stomata
3. Excretion
4. Gills
5. Seed coat
6. Nutrition
7. Froglet

Section E – Match the Following (Answers)

1. → ii
2. → iv
3. → i
4. → v
5. → iii

Section F – Give Two Examples (Answers)

1. Fish, Tadpole
2. Coleus, Petunia
3. Venus flytrap, Pitcher plant
4. Frog, Butterfly
5. Malaria, Dengue
6. Calendula, Zinnia

Section G – Short Answer Questions (2–3 sentences each)

1. Living things can grow, reproduce, and respond to stimuli in their environment. They also carry out life processes such as nutrition, respiration, and excretion.
2. Plants respond to light, water, and touch. For example, the Mimosa plant closes its leaves when touched.
3. The heart pumps blood throughout the body, supplying oxygen and nutrients to cells and removing waste products like carbon dioxide.
4. Reproduction ensures the survival of a species by producing new individuals. Without reproduction, the species may become extinct.

5. Amoeba moves by forming temporary extensions of its body called pseudopodia or false feet. This helps it to crawl and capture food.
6. Animals excrete waste through organs like kidneys and skin, while plants release excess water through stomata and remove other wastes via leaves or roots.
7. Aerobic respiration occurs in the presence of oxygen and releases more energy. Example: Humans breathing normally.

   Anaerobic respiration occurs without oxygen and releases less energy. Example: Yeast producing alcohol or humans during intense exercise causing lactic acid.
8. Camouflaging animals blend with their environment to avoid predators. For example, a chameleon changes its color to match the surroundings.
9. Metamorphosis is the transformation of an organism from one stage to another. Example: A caterpillar transforms into a butterfly.
10. Humans respond by moving away from danger and by sweating to cool the body in hot weather.

Section H – Long Answer Questions (5–6 sentences each)

1. The seven life processes are:
   - Nutrition: Taking in food and using it for energy (Humans eat food; plants use photosynthesis).
   - Respiration: Releasing energy from food (Humans breathe; plants respire through leaves).
   - Excretion: Removal of waste (Humans excrete urine; plants excrete water via stomata).
   - Growth: Increase in size and complexity (A baby grows into an adult).
   - Reproduction: Producing new individuals (Frogs lay eggs; humans reproduce sexually).
   - Movement: Change in position or location (Animals walk; plants bend toward light).
   - Response to stimuli: Reacting to changes in environment (Mimosa closes leaves; humans withdraw hand from hot objects).
2. Animals move from place to place using muscles, e.g., walking or running. Plants show limited movement, mainly growth responses, e.g., sunflower bending toward light or Mimosa closing leaves when touched. Animal movement is rapid, whereas plant movement is slow and growth-based.
3. The silk moth undergoes four stages:
   - Egg: Laid on leaves.
   - Larva (caterpillar): Feeds on leaves and grows; secretes silk to form a cocoon.
   - Pupa (cocoon): Transformation occurs inside; larva changes into adult moth.
   - Adult: Emerges from cocoon, mates, and lays eggs to continue the cycle.

4. Adaptations help organisms survive in specific environments. For example, camels store water and have long eyelashes to survive in deserts, while cacti have spines and store water to survive in dry areas. Polar bears have thick fur and fat for cold climates. Adaptations improve chances of survival and reproduction.
5. Living organisms are classified based on characteristics such as movement, reproduction, feeding habits, and presence of tissues. For example, animals that can move are grouped separately from plants that show growth movements. Organisms with similar life processes are placed in the same category to make identification easier.

Section I – Give Reasons

1. These seeds require darkness to germinate, so covering them with soil provides the necessary environment.
2. Camouflage allows animals to blend with their surroundings, avoiding predators and increasing their chances of survival.
3. Excretion removes harmful waste products from the body, preventing damage to cells and maintaining homeostasis.
4. Leaves contain chlorophyll, which is necessary for photosynthesis; without leaves, plants cannot make food.
5. Amoeba needs water for movement, feeding, and transporting nutrients and waste; without water, it cannot live.

Section J – Case Study – Life Cycle of a Butterfly (Answers)

1. (a) Egg – The initial stage laid on leaves
   (b) Larva – Caterpillar that feeds and grows
   (c) Pupa – Chrysalis stage where metamorphosis occurs
   (d) Adult Butterfly – Fully developed butterfly that can fly and reproduce
2. Caterpillar eats leaves and grows, storing energy for metamorphosis
3. Pupa protects the transforming caterpillar and allows body reorganization
4. Egg → Larva → Pupa → Adult Butterfly
5. Larva stage is crucial for growth and energy storage for survival

Section K – Assertion–Reason (Answers)

1. (b) Both A and R are correct, but R is not the correct explanation of A
2. (c) A is wrong, R is correct
3. (a) Both A and R are correct, and R explains A
4. (a) Both A and R are correct, and R explains A
5. (c) A is correct, R is wrong