ICSE Board
Class VII Biology
Sample Paper – 2

Time: 2 hrs **Total Marks: 75**

General Instructions:

1. **All** questions are **compulsory**.
2. Questions 1 to 15 carry one mark each.
3. Questions in 2 A and B carry one mark each.
4. Questions in 3 A carry one mark each and B carries 5 marks.
5. Question 4 A and B carries 5 marks each.
6. Questions in 5 A and B carry one mark each.
7. Questions in 6A and B carry one mark each.
8. Question 7 A and B carry five marks each.

Question 1

Choose the correct answer out of the four available choices given below each question. [15]

1. Which of the following are dividing tissues in case of plants?
   (a) Meristematic tissue
   (b) Parenchyma
   (c) Sclerenchyma
   (d) Collenchyma

2. Which of the following is not true about parenchyma?
   (a) They are thin walled, oval or round cells.
   (b) They are found in the stem, leaves and flowers.
   (c) They provide mechanical strength.
   (d) They contain leucoplasts and store food.

3. *Amoeba* moves with the help of
   (a) Cilia
   (b) Flagella
   (c) Pseudopodia
   (d) Webbed feet

4. Which of the following is not a characteristic feature of mammals?
   (a) Four-chambered heart
   (b) Warm-blooded
   (c) Skin covered with scales
   (d) Mammary glands

5. Which of the following comes under the category of spiny-skinned organisms?
   (a) Sea urchin
   (b) Prawn
   (c) *Pila*
   (d) Cockroach

6. How many molecules of ATP are produced during aerobic respiration?
   (a) 36
   (b) 34
   (c) 38
   (d) 2

7. Tannin is a _____.
   (a) Human respiratory product
   (b) Plant excretory product
   (c) Human excretory product
   (d) Plant respiratory product

8. Which of the following body areas are used for skin prick test?
   (a) Hand
   (b) Forearm and back
   (c) Palm
   (d) Shoulder

9. Which of the following are not striated muscles?
   (a) Muscles of the arm
   (b) Muscles of the face
   (c) Muscles of the legs
   (d) Muscles of the urinary bladder

10. _____ are dense connective tissues containing only fibroblasts and collagen fibres.
   (a) Bones
   (b) Ligaments
   (c) Tendons
   (d) Cartilage

11. The fine branches given out from the cell body of a nerve cell are
   (a) dendrites
   (b) cyton
   (c) axon
   (d) neuron

12. Unicellular organisms with a proper nucleus belong to
    (a) Protista
    (b) Monera
    (c) Fungi
    (d) Algae

13. Which of the following is not an arthropod?
    (a) Prawn
    (b) Butterfly
    (c) Earthworm
    (d) Spider

14. Stomata are present on the surface of
    (a) Leaves
    (b) Roots
    (c) Stem
    (d) Flower

15. Which of the following constitutes an organ?
    (a) Tissues
    (b) Organism
    (c) Organ System
    (d) None of the above

Question 2

A. Name the following. [5]
    1. Tissue that transports water and minerals in plants.
    2. Network of hyphae in fungi.
    3. Muscles found only in the heart.
    4. Another name for the brain box.
    5. Substances that cause allergies.

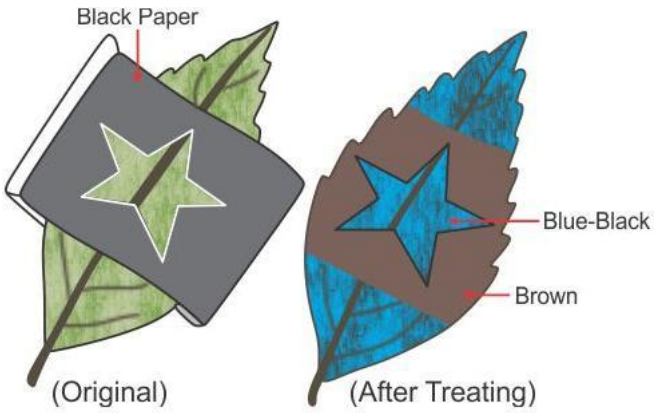
B. Fill in the blanks. [5]
    1. The basophils release an inflammatory chemical called _____ during an allergic reaction.
    2. _____transmit messages towards the cell body.
    3. In a mitochondrion, _____on the inner membrane serve to increase the surface area for the formation of ATP.
    4. _____ are called amphibians of plant kingdom.
    5. The body is said to have _____ symmetry if it can be divided into two identical halves along any plane.

Question 3

A. Match the following. [5]

Column A	Column B
1. Sponge	a. Monocot
2. Maize	b. Corpuscles
3. *Paramoecium*	c. Powerhouse of the cell
4. Blood	d. Porifera
5. Mitochondria	e. Protista

B. Observe the given diagram and answer the following questions: [5]



(a) Why leaf is covered with black paper strip?
(b) What is the aim of this experiment?
(c) Is destarching of plant necessary before performing this experiment? Why?

Question 4

A. [5]

(a) Classify the following plants as monocots and dicots-
Rice, Pea, Grass, Brinjal.
(b) State any three points of differences between monocots and dicots.

B. Complete the following table. [5]

Class	**Aves**	**Mammalia**
Body covering		
Reproduction		
Examples		

Question 5

A. State one point of difference between the following on the basis of what is given in the brackets. [5]
   1. Striated muscles and unstriated muscles (control)
   2. Xylem and phloem (direction of transport)
   3. Molluscs and echinoderms (movement)
   4. Aerobic respiration and anaerobic respiration (amount of energy released)
   5. Cocci and bacilli (shape)

B. Find the odd one out. [5]
   1. Lungs, Bronchi, Trachea, Kidneys
   2. Annelida, Arthropoda, Reptilia, Nematoda
   3. *Euglena*, *Spirogyra*, *Amoeba*, *Chlorella*
   4. Pituitary, Thyroid, Adrenal, Spinal cord
   5. Penguin, Ostrich, Vulture, Kiwi

Question 6

A. Explain movement in *Amoeba* and *Paramoecium*. [5]

B. Define the following. [5]
   1. Classification
   2. Binary fission
   3. Vertebrates
   4. Photosynthesis
   5. Sensory nerve

Question 7

A. Answer the following.
   1. What are the symptoms of food allergy? [2]
   2. In which phylum is liverfluke placed? Why? [3]

B. Answer the following.
   1. What are the main functions of cerebellum? [2]
   2. Leaves of a healthy potted plant were coated with vaseline. Will this plant remain healthy for long? Give reasons. [3]

Solution

Question 1

1. (a) Meristematic tissue. (Meristematic tissues are made up of actively dividing cells which produce more cells leading to the growth of the plant body.)

2. (c) They provide mechanical strength. (Parenchyma cells are thin walled, round or oval shaped, contain leucoplasts and store food. They are present in the stem, leaves and flowers of the plant.)

3. (c) Pseudopodia. (*Amoeba* moves with the help of pseudopodia and the movement is termed 'amoeboid movement'.

4. (c) Skin covered with scales. (The skin of mammals is covered with hair.)

5. (a) Sea urchin. (The body of sea urchin is covered with spikes externally.)

6. (c) 38. (Aerobic respiration takes place in the presence of oxygen. 38 molecules of ATP are formed along with the release of CO_2.)

7. (b) Plant excretory product. (Tannin is an excretory product secreted by the tea leaves or the barks of trees.)

8. (b) Forearm and back. (In skin-prick test, the common areas for testing include the inside of the forearm and the back.)

9. (d) Muscles of the urinary bladder. (Muscles of the urinary bladder are unstriated or smooth muscles which are not under the control of one's will.)

10. (c) Tendons. (Tendons are in the form of tough parallel fibres of connective tissues containing fibroblasts and collagen fibres which join muscles to the bones.)

11. (a) Dendrites. (The fine, elongated hair-like extensions from the cell body of a nerve cell are called dendrites.)

12. (a) Protista. (Kingdom Protista includes single-celled or unicellular organisms with a well developed nucleus, eg., *Amoeba*.)

13. (c) Earthworm. (Animals with jointed legs are called arthropods. The body of an earthworm is composed of rings or segments.)

14. (a) Leaves. (Stomata are tiny openings found mainly on the lower surface of leaves.)

15. (a) Tissues. (Tissues collectively constitute an organ. Example: Connective tissue, nerves and sensory cells together constitute the organ tongue.)
    Please note that the information provided in brackets is to help you in your learning. It does not have to be included in your answer.

Question 2

A.

1. Xylem
2. Mycelium
3. Cardiac muscles
4. Cranium
5. Allergens

B.

1. Histamine
2. Dendrites
3. Cristae
4. Bryophytes
5. Radial

Question 3

A.

Column A	Column B
1. Sponge	d. Porifera
2. Maize	a. Monocot
3. *Paramoecium*	e. Protista
4. Blood	b. Corpuscles
5. Mitochondria	c. Powerhouse of the cell

B.

(a) Leaf is covered with black strip so that some part of the leaf does not receive sunlight.
(b) Aim of this experiment is to show that sunlight is necessary for photosynthesis.
(c) Yes, destarching of leaf is necessary before performing this experiment. During this period, all the starch from leaves will be removed to the storage organs and the leaves will not show the presence of starch. This ensures that any starch present after the experiment has been formed under experimental conditions.

Question 4

A.

(a) Monocots - Rice, Grass
Dicots- Pea, Brinjal

(b) Differences between monocots and dicots:

Monocots	Dicots
1. One cotyledon	1. Two cotyledons
2. Parallel venation	2. Reticulate venation
3. Fibrous roots	3. Tap roots

B.

Class	**Aves**	**Mammalia**
Body covering	Feathers	Hair
Reproduction	Lay eggs	Give birth to young ones
Examples	Peacock, sparrow	Cow, deer

Question 5

A.

1. Striated muscles are under the control of one's will while unstriated muscles are not under the control of one's will.
2. The movement of materials in xylem is unidirectional, whereas the movement in phloem is bidirectional.
3. Molluscs move with the help of a muscular foot while echinoderms move with the help of tube feet.
4. Aerobic respiration releases 38 molecules of ATP, while anaerobic respiration releases 2 molecules of ATP.
5. Cocci are spherical in shape, while bacilli are rod-shaped.

B.

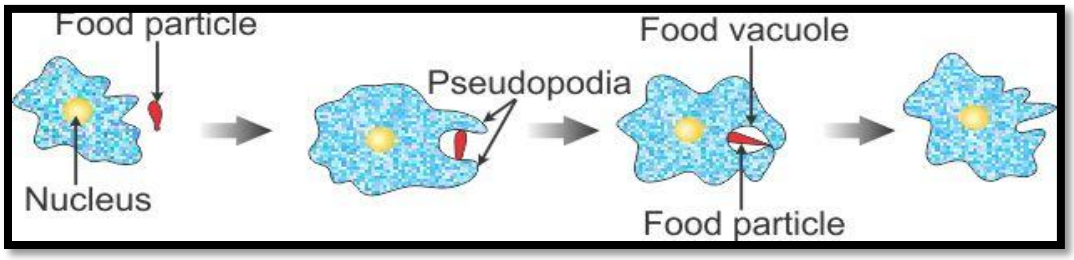
1. Kidneys. (Kidney is a part of the excretory system, while trachea, bronchi and lungs constitute the respiratory system.)
2. Reptilia. (Class Reptilia belongs to Phylum Vertebrata while Class Annelida, Arthropoda and Nematoda belong to Phylum Invertebrata.)
3. *Spirogyra*. (*Spirogyra* is multicellular, while *Euglena, Amoeba* and *Chlorella* are unicellular.)
4. Spinal cord. (The spinal cord belongs to the nervous system, while the pituitary, thyroid and adrenal are glands and belong to the endocrine system.
5. Vulture. (A vulture can fly, while the penguin, ostrich and kiwi are all flightless birds.)

Please note that the information provided in brackets is to help you in your learning. It does not have to be included in your answer.

Question 6

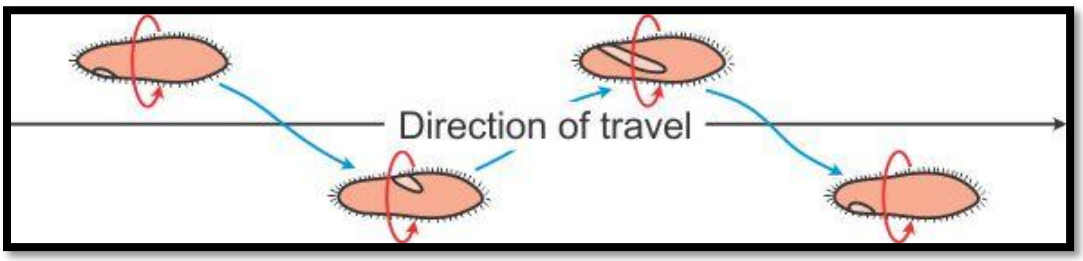
A. **Movement in *amoeba*:**

- *Amoeba* is unicellular, and does not have a definite shape.
- In order to move, it thrusts out temporary finger-like projections called false-feet or 'pseudopodia' in the direction of movement.
- The cellular contents are pushed forward into the pseudopodium.
- *Amoeba* moves forward because of the flowing motion of the cytoplasm. It is often referred to as amoeboid movement.



Movement in *paramoecium*:

- *Paramoecium* has a slipper-shaped body with a flexible membrane called **pellicle**.
- The pellicle is covered with short hair-like structures called **cilia**.
- The cilia beat in an organised manner to propel the organism through water.
- During its movement, the organism rotates in a spiral path.
- It moves forward or backward depending on the direction in which the cilia beat.
- It can also crawl on its oral side using the cilia as tiny legs.



B.

1. **Classification**: Grouping organisms together on the basis of certain common features is called classification.
2. **Binary fission**: Binary fission is a method of asexual reproduction in which a single parent organism splits to give rise to two identical daughter organisms.
3. **Vertebrates**: Animals with a backbone or a vertebral column are called vertebrates.
4. **Photosynthesis**: The process of synthesising food using water from the soil and carbon dioxide from the air together with chlorophyll and sunlight is called photosynthesis.
5. **Sensory nerve**: Sensory nerve contains only sensory fibres which bring impulses from the sense organs to the brain or the spinal cord.

Question 7

A.

1. **Symptoms of food allergy:**
   - Abdominal pain
   - Bloating
   - Vomiting
   - Diarrhoea
   - Itchy skin
   - Swelling of the skin

2. Liverfluke is placed in phylum Platyhelminthes. Liverfluke is a small, soft, flattened, unsegmented worm. It does not have a body cavity. Therefore, it is placed in Phylum Platyhelminthes.

B.

1. **Main functions of cerebellum:**
   - It helps in maintaining the posture and equilibrium of our body.
   - It enables us to make precise and accurate movements.

2. The plant will not remain healthy for a long time because:
   - It would not get oxygen for respiration.
   - It would not get carbon dioxide to carry out photosynthesis.
   - The upward movement of water and minerals would be hampered due to lack of transpiration.