



REVISION SHEET

SUBJECT: BIOLOGY

CLASS-IX

TERM 1

1. Multiple Choice Questions:

i. Who first observed cells in a thin slice of cork?

- A. Anton van Leeuwenhoek B. Robert Hooke C. Schleiden D. Schwann

ii. Which cell organelle is known as the "Powerhouse of the cell"?

- A. Nucleus B. Ribosome C. Mitochondria D. Golgi apparatus

iii. Which structure controls all the activities of the cell?

- A. Cytoplasm B. Cell membrane C. Nucleus D. Vacuole

iv. The selectively permeable membrane of a cell is the:

- A. Cell wall B. Plasma membrane C. Nuclear membrane D. Cytoplasm

v. Which plant tissue is responsible for the transport of water?

- A. Phloem B. Xylem C. Parenchyma D. Collenchyma

vi. Which tissue provides flexibility to young stems?

- A. Sclerenchyma B. Parenchyma C. Collenchyma D. Xylem

vii. Blood is a type of:

- A. Epithelial tissue B. Muscular tissue C. Nervous tissue D. Connective tissue

viii. Which tissue helps in the movement of bones?

- A. Smooth muscle B. Skeletal muscle C. Cardiac muscle D. Nervous tissue

ix. The jelly-like substance present inside the cell is:

- A. Nucleoplasm B. Cytoplasm C. Cell sap D. Matrix

x. Which tissue is responsible for rapid transmission of impulses?

- A. Muscular tissue B. Nervous tissue C. Connective tissue D. Epithelial tissue

2. Assertion–Reason Questions :

Choose the correct option:

- **A. Both Assertion and Reason are true, and Reason is the correct explanation.**
- **B. Both Assertion and Reason are true, but Reason is not the correct explanation.**
- **C. Assertion is true, but Reason is false.**
- **D. Assertion is false, but Reason is true.**

1. Assertion: Plant cells have a cell wall.

Reason: Cell wall provides rigidity and protection.

2. Assertion: Mitochondria are called the powerhouse of the cell.

Reason: They produce ATP during cellular respiration.

3. Assertion: Xylem transports prepared food.

Reason: Phloem transports water and minerals.

4. Assertion: Cardiac muscles work continuously without fatigue.

Reason: They are involuntary muscles present in the heart.

5. Assertion: Ribosomes help in protein synthesis.

Reason: Ribosomes are known as the protein factories of the cell.

3. Case-Based Question :

A runner experiences rapid movement during a race. His muscles contract repeatedly, while the heart continues to beat and nerves transmit signals throughout the body.

Answer the following:

1. Which muscle helps in running?
2. Which muscle keeps the heart beating continuously?
3. Explain the role of nervous tissue during running.

2. A student observed onion peel cells under a microscope. He noticed a rigid outer boundary, a nucleus and a large vacuole.

Answer the following:

1. Which type of cell was observed?
2. Name the rigid outer boundary.
3. Explain one function of the large vacuole.

4. Short Answer Questions (2 Marks)

1. A student observed an unknown cell under the microscope. The cell had a cell wall, chloroplasts and a large central vacuole. Identify the type of cell and justify your answer by mentioning any two characteristic features.

2. A plant kept in darkness for several days was found to have colourless plastids instead of green chloroplasts. Explain the reason and predict how this would affect the plant.

3. A patient suffers from severe blood loss after an accident. Explain why blood is classified as a connective tissue and how it helps in such a situation.

4. A farmer notices that the stem of a young plant bends easily during strong winds, whereas the stem of an old tree remains rigid. Name the tissues responsible for this difference and explain their roles.

5. Short Answer Questions (3 Marks)

1. A student prepared temporary slides of onion peel and cheek cells. He observed that the onion peel cells appeared rectangular with a rigid boundary, whereas cheek cells were irregular in shape. Explain the structural differences responsible for these observations.

2. A gardener accidentally removes the bark from the trunk of a tree in a complete ring around its circumference. Predict the long-term effect on the plant and explain your answer.

3. Plants growing in waterlogged soil often show poor growth even though sufficient water is available.

Using your knowledge of plant tissues and cell functions, explain this observation.

4. Explain the different types of permanent tissues in plants with suitable examples.

5. Differentiate between parenchyma, collenchyma and sclerenchyma.

6. Long Answer Questions (5 Marks)

1. Draw a neat labelled diagram of a plant cell. Explain the functions of any five cell organelles.

2. Explain the different types of permanent tissues in plants with suitable examples.

3. Describe the different types of animal tissues and state one important function of each.

4. Compare plant cells and animal cells on the basis of structure and organelles.

5. Meera is a classical dancer. She can rotate her arm fully, bend her elbow only in one direction, and twist her neck slightly. She practices daily to keep her body flexible.

a) Identify the type of joint at: a) Shoulder b) Elbow c) Neck

Why can she rotate her arm fully but not her elbow?

b) What is present between the bones in these joints to prevent friction?

c) How does daily dance practice help her muscular and skeletal system?