

Brain Builders Coaching center**Class 9 Science****Time: 2 Hours****Maximum Marks: 50****Instructions:**

- **All questions are compulsory.**
- **Answer neatly and to the point.**
- **Diagrams must be labelled wherever necessary.**

Section A: Multiple Choice Questions ($1 \times 10 = 10$ marks)

Choose the correct option:

Q1.

(a) Which of the following is a unicellular organism?

- (i) Dog (ii) Mango (iii) Amoeba (iv) Rose

(b) The cell organelle known as the 'kitchen of the cell' is:

- (i) Ribosome (ii) Chloroplast (iii) Mitochondria (iv) Vacuole

(c) The smallest known cell is:

- (i) Hen's egg (ii) Bacteria (iii) Onion cell (iv) RBC

(d) In plant cells, the largest organelle is:

- (i) Nucleus (ii) Golgi body (iii) Vacuole (iv) Ribosome

(e) The plasma membrane is:

- (i) Fully permeable (ii) Impermeable (iii) Semi-permeable (iv) Waterproof

(f) Which of the following does **not** have a cell wall?

- (i) Bacteria (ii) Fungi (iii) Animal cell (iv) Plant cell

(g) The function of mitochondria is:

- (i) Photosynthesis (ii) Protein synthesis
(iii) Energy production (iv) Digestion

(h) Cell theory was proposed by:

- (i) Mendel (ii) Watson and Crick (iii) Schleiden and Schwann (iv) Hooke

(i) Which of the following is found only in plant cells?

- (i) Cell membrane (ii) Mitochondria (iii) Chloroplast (iv) Ribosome

(j) Ribosomes are mainly responsible for:

- (i) Respiration (ii) Excretion (iii) Protein synthesis (iv) Digestion

Section B: Fill in the Blanks (1 × 5 = 5 marks)

Q2. Fill in the blanks:

- (a) First living cell discovered by_____.
- (b) The _____ controls all the activities of the cell.
- (c) The outermost layer of a plant cell is the _____.
- (d) The organelle responsible for photosynthesis is _____.
- (e) In a cell, proteins are synthesized by _____.

Section C: True or False (1 × 5 = 5 marks)

Q3. Write **True** or **False** for the following statements:

- (a) Prokaryotic cells have a well-defined nucleus.
- (b) Cell wall is absent in animal cells.
- (c) Mitochondria are known as the powerhouse of the cell.
- (d) Vacuoles are larger in animal cells than in plant cells.
- (e) Cytoplasm is a non-living fluid in the cell.

Section D: Match the Following ($1 \times 5 = 5$ marks)

Q4. Match Column A with Column B:

Column A	Column B
(a) Lysosome	(i) Protein synthesis
(b) Nucleus	(ii) Digestive bag
(c) Ribosome	(iii) Control center
(d) Vacuole	(iv) Packaging & transport
(e) Golgi apparatus	(v) Storage

Section E: One-word Answer ($1 \times 5 = 5$ marks)

Q5. Answer the following in one word only:

- (a) Green pigment present in chloroplast – _____
- (b) The process by which cells remove waste – _____
- (c) Smallest living part seen by Robert Hooke – _____
- (d) The jelly-like substance inside the cell – _____
- (e) The organelle found only in animal cells for digestion – _____

Section F: Very Short Answer Questions ($2 \times 3 = 6$ marks)**Q6.**

- (a) Give two differences between prokaryotic and eukaryotic cells.
- (b) Give two difference between plant cell and animal cell.
- (c) What are vacuoles? Name one function.

Section G: Short Answer Questions ($3 \times 3 = 9$ marks)**Q7.**

- (a) List any three differences between plant and animal cells.
- (b) Describe the structure and function of the plasma membrane.
- (c) What is cytoplasm? Mention any two of its functions.

Section H: Long Answer Questions ($4 \times 2 = 8$ marks)**Q8.**

- (a) Explain the structure and functions of the nucleus in detail.

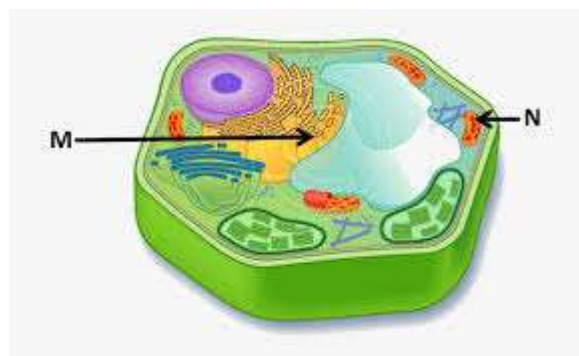
OR

- (b) Draw a neat and well-labelled diagram of a **plant cell**. Label at least six parts and explain any two of them.

Section I: Diagram-Based Question (2 marks)

Q9.

Observe the diagram and answer the following:



(a) Identify the parts marked M and N.

(b) Write one function of each.