



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Master of Science (Semester- 2) External Examination – 2026
PS02MAZOO01, CELL BIOLOGY

DATE: 24-03-2026

TIME: 10:45 A.M. to 01:15 P.M.

MARKS: 50

Q-1 Multiple choice questions.

(10)

1. Passive movement of water across a semipermeable membrane is called:
A. Diffusion B. Osmosis C. Active transport D. Endocytosis
2. Gap junctions in animal cells are formed by:
A. Desmosome B. Connexons C. Integrins D. Cadherins
3. Cell motility in muscle contraction mainly involves:
A. Tubulin B. Actin and Myosin C. . Keratin D. Elastin
4. Peroxisomes mainly function in:
A. Detoxification B. Protein synthesis C. Lipid storage D. DNA replication
5. Uptake of solid particles by a cell is called:
A. Pinocytosis B. Phagocytosis C. Exocytosis D. Diffusion
6. COP I vesicle formation is regulated by which small GTP-binding protein?
A. Rab B. Sar 1 C. ARF 1 D. Ras
7. The checkpoint that ensures DNA is completely replicated before mitosis is:
A. G1 checkpoint B. S checkpoint C. G2 checkpoint D. M checkpoint
8. The mitotic spindle is mainly composed of:
A. Actin filaments B. Microtubules C. Intermediate filaments D. Collagen fibers
9. Genes that promote cancer when mutated are called:
A. Tumor suppressor genes B. Oncogenes
C. Regulatory genes D. Structural genes
10. Which of the following is a tumor suppressor gene?
A. Ras B. Myc C. p53 D. Src

Q-2 Discuss the different mechanisms of transport across the cell membrane (10)

OR

Q-2 A. Write a short note on gap junctions. (05)

B. What are integral and peripheral proteins? (05)



Q-3 Compare COP I, COP II and clathrin coated vesicles with respect to structure, function and transport pathway (10)

OR

Q-3 A. Explain the structure and functions of microtubules and microtubular organelles. (06)

B. Explain the structure and function of intermediate filaments. (04)

Q-4 Give a detailed account of mitosis and cell division. (10)

OR

Q-4 A. Write a note on cell cycle checkpoints. (06)

B. Explain the process of meiosis and their stages. (04)

Q-5 A. Describe the characteristics and cell surface properties of cancer cells. (05)

B. Write a detailed note on oncogenes (05)

OR

Q-5 Define apoptosis and explain intrinsic and extrinsic pathways of apoptosis. (10)
