

B.Sc. Semester - 2 (NEP-2020) Examination**MARCH/APRIL-2026****BOT: Cell Biology (Major-4)****Time: 2:00 Hours****Marks: 50****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Que. 1 Answer according to instructions.

- 1) Compare Prokaryotic and Eukaryotic cells with suitable examples (05)
- 2) Explain: The endosymbiotic theory for the origin of Eukaryotic cells. (05)

OR

Que. 1 Answer according to instructions.

- 1) What is meiosis? Describe the stages of Prophase-I with suitable diagrams. (05)
- 2) Differentiate between prophase and metaphase of mitosis. (05)

Que. 2 Answer according to instructions.

- 1) Explain the structure and layers of the plant cell wall with neat & clean diagram. (05)
- 2) Explain the process of endocytosis and its types. (05)

OR

Que. 2 Answer according to instructions.

- 1) Describe the fluid mosaic model of plasma membrane proposed by Singer and Nicolson. (05)
- 2) Describe the process of simple and facilitated diffusion. (05)

OR

Que. 3 Answer according to instructions.

- 1) Describe the structure and types of lysosomes. (05)
- 2) Why are Mitochondria and chloroplast called semiautonomous organelles? Explain. (05)

OR

Que. 3 Answer according to instructions.

- 1) Explain the structure and function of thylakoids of grana. (05)
- 2) Explain: The structure of endoplasmic reticulum. (05)

Que. 4 Answer according to instructions.

- 1) What is cytoskeleton? Explain role and structure of microfilaments. (05)
- 2) What is nuclear pore complex? Discuss its structure and functions. (05)

OR

Que. 4 Answer according to instructions.

- 1) Write notes on nuclear lamina and its composition. (05)
- 2) Describe the structure and functions of nucleolus. (05)

Que. 5 Answer according to instructions.

- 1) Explain the role of Schleiden and Schwann in the formulation of cell theory. (05)
- 2) Explain the chemical composition of plasma membrane. (05)

OR

Que. 5 Answer according to instructions.

- 1) Write a short note on Golgi complex in plant cells. (05)
- 2) Explain: Molecular Organization of chromatin. (05)
