

[4]

2. Describe the vesicles mediated protein trafficking in detail.

Or

Describe the mechanism of protein targeting to endoplasmic reticulum.

3. Explain Eukaryotic cell division.

Or

Explain Apoptosis and genetic basis of cancer.

4. Explain organization of Gene and chromosome.

Or

Explain structure and function of Lampbrush and Polytene Chromosomes.

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G-1/101/21

Roll No.....

I Semester Examination, April-2021

M.Sc.

BIOCHEMISTRY

Paper I

(Cell Biology)

Time : 3 Hours]

[Maximum Marks : 80

Note : All questions are compulsory. Question Paper comprises of 3 sections. **Section A** is objective type/Multiple Choice questions with no internal choice. **Section B** is short answer type with internal choice. **Section C** is long answer type with internal choice.

SECTION 'A'

(Objective Type and Multiple Choice Questions)

Choose the correct answer :

8×1 = 8

- Lipid rafts are patches of cholesterol and
(a) carbohydrates (b) amino acids
(c) lipids (d) sphingolipids
- Thethe degree of unsaturation of the fatty acids of the bilayer, thethe fluidity of membrane.
(a) greater, lower (b) greater, more
(c) lesser, higher (d) none of these
- COPII-coated vesicles move the materials from to.....
(a) ERGIC, Golgi complex
(b) Golgi complex, ERGIC
(c) ER, Golgi complex
(d) Golgi complex, ER

[2]

4. Retrieval signals present on the C-terminus of ER resident proteins are captured by the receptors present on.....

- (a) Clathrin-coated vesicles
- (b) Golgi complex
- (c) COPI-coated vesicles
- (d) COPII-coated vesicles

5. The G-protein coupled receptors have theiroutside the cell.

- (a) amino terminus (b) carboxyl terminus
- (c) alpha helices (d) beta helices

6. Which of the following could be coded by a tumour-suppressor gene ?

- (a) A protein that helps prevent progression through cell cycle
- (b) A protein that helps prevent apoptosis
- (c) A protein that codes for a DNA repair enzyme
- (d) A protein that forms part of a growth factor signaling pathway.

7. Which of the following histones bind to linker DNA ?

- (a) H1 (b) H2A
- (c) H2B (d) H3

8. Which of the following are essential to the condensation of chromosomes as cells enter mitosis ?

- (a) Cohesins (b) Condensins
- (c) Histones (d) Topoisomerases

[3]

SECTION 'B'

4 × 6 = 24

(Short Answer Type Questions)

Note : Answer the following questions in 250 words.

Write short notes on :

1. Ion Channels

Or

Asymmetrical organization of Proteins in membrane.

2. Transport of Protein in Mitochondria

Or

Nucleus.

3. MAP Kinase Pathway

Or

P⁵³ Protein

4. Structure of Chromosome.

Or

Banding pattern of Chromosomes.

SECTION 'C'

12 × 4 = 48

(Long Answer Type Questions)

Note : Answer the following questions in 500 words.

1. Explain Active transport across the membrane with suitable example.

Or

Explain Electrical properties of membrane.