

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 2368

F-4

Your Roll No.....

Unique Paper Code : 2531403

Name of the Course : **B.Sc. (H) Microbiology**

Name of the Paper : Cell Biology

Semester : IV

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. All questions carry equal marks.

1. (a) Citing a suitable example write any one function of **any four** of the following :
 - (i) A peroxisomal enzyme
 - (ii) An intermediate filament (IF) protein
 - (iii) An integral plasma membrane protein
 - (iv) A gap junction protein in humans
 - (v) A mitochondrial inner membrane protein (2×4=8)
- (b) What are second messengers in cell signalling ? Explain giving a suitable example.

OR

Describe the structure and functions of chloroplast. (5)

- (c) Expand MPF. What is its function ? (1+1=2)
2. (a) Describe the structure and functions of nuclear pore complex. (3+2=5)
 - (b) Write the salient features of cancer cells. (6)
 - (c) Which cell part is affected in the individuals with following disease :
 - (i) Cystic Fibrosis
 - (ii) Gaucher's Disease (2×2=4)

P.T.O.

3. Differentiate between the following pairs of terms (**any three**) :
- (i) Ion Channels and ABC Transporters
 - (ii) Actin and Tubulin
 - (iii) Phagocytosis and Autophagy
 - (iv) Glycosylation in Golgi Complex and RER (5×3=15)
4. (a) Enlist the medical applications of stem cells. (5)
- (b) What are snoRNA's ? Add a note on their function. (1+2=3)
- (c) Describe the salient features of Fluid Mosaic Model of cell membrane. (5)
- (d) Where are the following present in the cell :
- (i) Toc
 - (ii) RuBisCO (1×2=2)
5. Write short notes on **any three** of the following :
- (i) Role of caspases in apoptosis
 - (ii) Role of nucleolus in RNA processing
 - (iii) Role of actin in cell movement
 - (iv) Cell cycle
 - (v) Therapeutic cloning (5×3=15)
6. (a) Define the following terms (**any five**) :
- (i) Pluripotency
 - (ii) Sarcoma
 - (iii) Desmosomes
 - (iv) Euchromatin
 - (v) Unit membrane
 - (vi) Uniport (2×5=10)
- (b) Describe the structure of bacterial cell wall. How does Gram positive cell wall differ from that of Gram negative ? (5)