



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 3rd Semester Examination, 2023

CC6-MICROBIOLOGY
CELL BIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any **five** of the following: 1×5 = 5
 - (a) What is Villin?
 - (b) Define filopodia.
 - (c) What are sister chromatids?
 - (d) What are stroma lamellae?
 - (e) Where do you find cardiolipin?
 - (f) What are micelles?
 - (g) Where is nucleolus found?
 - (h) Give an example of secondary messenger.

2. Answer any **three** of the following: 5×3 = 15
 - (a) Mention the important features of protrusions of the cell surface. 5
 - (b) In what ways are cells in G0 and G1 similar? How do they differ? 5
 - (c) What roles do lamins play in nuclear structure and function? What is the significance of nuclear speckles? $2\frac{1}{2} \times 2 = 5$
 - (d) Write a note on the chemical composition of cell membrane. 5
 - (e) Describe the process of facilitated diffusion giving emphasis on the types of transport proteins. 5

3. Answer any **two** of the following: 10×2 = 20
 - (a) Describe in detail the mechanism of programmed cell death mediated by various caspases. 10
 - (b) Make a note on Stoffler and Wittmann model of ribosome. Differentiate between prokaryotic and eukaryotic ribosome. 6+4
 - (c) Compare and contrast co-translational and post-translational translocation of polypeptide chains into the endoplasmic reticulum. Why are the carbohydrate groups of glycoproteins always exposed on the surface of the cell? 7+3
 - (d) Describe the event of regulation of glycogen breakdown by protein phosphorylation. Comment on the regulation of c-AMP dependent protein kinases. 10

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