



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 1st Semester Examination, 2022

CC2-BOTANY

BIOMOLECULES AND CELL BIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

1. Answer any **five** questions from the following: 1×5 = 5
- (a) Who discovered nucleus?
 - (b) What is zwitter ion?
 - (c) What is nucleosome?
 - (d) What is Z DNA?
 - (e) Name one sulphur containing amino acid.
 - (f) What is unsaturated fatty acids?
 - (g) What is antiport?
 - (h) What is Prosthetic group?

GROUP-B

2. Answer any **three** questions from the following: 5×3 = 15
- (a) Discuss the Endosymbiotic theory with proper diagram. 5
 - (b) Give the difference between Reducing and Non-reducing sugar with suitable examples. 5
 - (c) Briefly describe the properties of α -helix protein. Differentiate between active and passive transport. 3+2
 - (d) Briefly describe each stages of Prophase-I along with proper sketches. 5
 - (e) Describe the fluid mosaic model of plasma membrane. Give the function of plasma membrane. $3\frac{1}{2}+1\frac{1}{2}$

GROUP-C

3. Answer any *two* questions from the following: 10×2 = 20
- (a) What are Enzymes and Apoenzymes? Classify enzymes with suitable example. 3+7
- (b) What is Epimer? Mention the functions of smooth ER. How does the checkpoints regulate cell cycle? 2+2+6
- (c) Briefly describe the ultrastructure of Mitochondria with suitable diagram. Why is it called the power house of the cell? 8+2
- (d) Differentiate between DNA and RNA. Discuss clover-leaf model regarding the structure of tRNA along with diagram. 2+8

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