



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2021-22

BOTACOR02T-BOTANY (CC2)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.*

GROUP-A

1. Answer **all** questions briefly from the following: 1×3 = 3
 - (a) Define ionic bond with example.
 - (b) How does protein denaturation can be induced?
 - (c) Write the definition of prosthetic group.

2. Answer any **four** questions from the following: 3×4 = 12
 - (a) Write down the name of homopolysaccharide and heteropolysaccharide with their monomer. Draw the chemical structure of pentose sugar. (1+1)+1
 - (b) What are Peptides? With proper diagram describe the formation of Peptide bond. 2+1
 - (c) State the differences between oils and fats. What do you mean by rancidity of fats? 2+1
 - (d) Draw the basic structure of any nucleotide and label its components. 2+1
 - (e) What do you mean by exothermic and endothermic reactions? 1½ + 1½
 - (f) Prove that the pH of pure water is 7. What is Henderson-Hasselbalch equation? 2+1

3. Answer any **one** question from the following: 5×1 = 5
 - (a) State the theories of mechanism of enzyme action.
 - (b) Discuss different levels of protein structure mentioning the bonds involved.

GROUP-B

4. Answer **all** questions briefly from the following: 1×3 = 3
 - (a) What happens at the S phase?
 - (b) What is flip-flop movement?
 - (c) Mention the importance of signal sequence in protein targeting.



5. Answer any **four** questions from the following:
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| (a) Discuss the structure of plant cell wall with emphasis on chemical composition. | 3 |
| (b) Nucleosome concept — Explain with a diagram in brief. | 3 |
| (c) Discuss the role of channels and carrier proteins in membrane transport. | 1+2 |
| (d) Briefly describe the cell cycle checkpoints in yeast. | 2+1 |
| (e) Why is fluid mosaic model considered as the best model? What are the factors that affect membrane fluidity? | |
| (f) Mention the expected chromosome number in root tip cells, pollen mother cells, pollen cells and anther wall cells of a diploid plant with chromosome number $2n = 16$. What is bivalent? | |
6. Answer any **one** question from the following: 5×1 = 5
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|---|
| (a) Write the structure of nuclear pore complex with proper diagram. |
| (b) With suitable diagram describe the formation of 1400 nm metaphase chromosome. |

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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