



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 1st Semester Examination, 2022-23

**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) Name an aromatic amino acid found in proteins.
  - (b) What is co-enzyme?
  - (c) What is Gibb's free energy?
  
2. Answer any **four** questions from the following: 3×4 = 12
  - (a) Write down the important properties of water.
  - (b) Differentiate between  $\alpha$ -helix and  $\beta$ -pleated sheet.
  - (c) Write a short note on t-RNA structure.
  - (d) Explain briefly redox reactions.
  - (e) Draw a neatly labelled Lineweaver-Burk plot.
  - (f) Differentiate between triacylglycerols and phosphoglycerides.
  
3. Answer any **one** question from the following: 5×1 = 5
  - (a) Compare epimer with anomer with proper example. Write down the name and function of a storage polysaccharide. 3+2
  - (b) ATP is called the 'Energy Currency of the Cell'— Justify the statement. 3+2  
 $\Delta G = \Delta H - T\Delta S$ , what does  $\Delta G$ ,  $\Delta H$  and  $T\Delta S$  denote?

**GROUP-B**

4. Answer **all** questions briefly from the following: 1×3 = 3
  - (a) What is the full form of NOR?
  - (b) What are lysosomes?
  - (c) What are tubulins?

5. Answer any **four** questions from the following: 3×4 = 12
- (a) Write down the characteristic features of cpDNA. 3
  - (b) What is active transport? Distinguish between antiport and symport. 1+2
  - (c) Explain endosymbiotic origin of mitochondria. 3
  - (d) Mention the importance of cell cytoskeleton. 3
  - (e) Differentiate between meiotic division I and II. What is cell cycle? 2+1
  - (f) What are lamins? State the functions of NPC. 1+2
6. Answer any **one** question from the following: 5×1 = 5
- (a) What is glycosylation protein? Elucidate the role of golgi complex in sorting and distribution of proteins. 1+4
  - (b) Describe the role of MPF in regulation of cell cycle. 5

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