



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2018

BOTACOR02T-BOTANY (CC2)

BIOMOLECULES AND CELL BIOLOGY



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.*

1. Answer **all** questions briefly from the following: 1×5 = 5
- (a) Give example of one reducing and one non-reducing sugar.
 - (b) What is B-form of DNA?
 - (c) What is ribozyme?
 - (d) What is nuclear lamina?
 - (e) What is G₀ phase?

2. Answer any **five** questions from the following: 3×5 = 15
(At least **two** questions from each group)

GROUP-A

- (a) What do you mean by cis-trans fatty acids? 3
- (b) Define epimer and anomer with example. 1.5+1.5
- (c) Explain the molecular structure of α -helix structure of protein. 3
- (d) How does the structure of ATP contribute to its function? 3

GROUP-B

- (e) Mention the three main types of passive transport. What is the source of energy used in the active transport through biological membrane? 2+1
- (f) Define cytoskeleton. Differentiate between microtubules and microfilaments. 1+2
- (g) State the significance of meiotic cell division. 3
- (h) What is endosymbiotic hypothesis? To which cellular organelles the hypothesis can be applied? 2+1

3. Answer any *four* questions from the following: 5×4 = 20
(At least *two* questions from each group)

GROUP-A

- (a) Define carbohydrate. Classify them with suitable example. 1+4
- (b) Outline the structure of DNA as proposed by Watson and Crick. 5
- (c) Describe in short the Michaelis-Menten equation of enzyme action. 5

GROUP-B

- (d) Describe briefly the structure of nuclear pore complex with suitable diagram. 3+2
- (e) What is MPF? Discuss the role of MPF in regulating the cell cycle of Yeast. 1+4
- (f) What is peroxisome? State the role of peroxisome in photorespiration. 5

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