



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 2nd Semester Examination, 2022

PHYACOR04T-PHYSIOLOGY (CC4)

CHEMISTRY OF BIOMOLECULES

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

All symbols are of usual significance.

Answer any *five* questions from the following

8×5 = 40

1. (a) What are epimers? 2
 (b) Explain anomerism with a suitable example. 4
 (c) How many isomers are possible in glucose molecule in its pyranose form? 2
2. (a) Why sucrose is called an invert sugar? 3
 (b) State the major differences between amylose and cellulose. 3
 (c) What are enantiomers? Give examples. 2
3. (a) Write structure and chemical name of tryptophan. 2
 (b) Discuss about the forces stabilizing higher structures of proteins. 4
 (c) What is isoelectric pH? 2
4. (a) What is α -helix? 2
 (b) Write a short note on collagen triple helix. 4
 (c) What do you understand by the term 'salting out' of proteins? 2
5. (a) Write down the structure of the following fatty acid: 2

$$\text{C18: } \Delta^{9, 12, 15}$$

 (b) What is *Reichert-Meissl* number? State its significance. 2+1
 (c) Explain why *trans*-fatty acids have higher melting point than *cis*- fatty acids. 3
6. (a) What is a liposome? State its importance. 2+2
 (b) Differentiate between gangliosides and globosides. 2
 (c) Explain the term 'saponification'. 2

7. (a) Write the structure and chemical name of guanine. 2
(b) What is T_m of DNA? State its significance. 2+2
(c) What is pseudouridine? 2
8. (a) Write the salient features of B-DNA. 4
(b) What is a polycistronic mRNA? 2
(c) Show the formation of a phosphodiester bond. 2

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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