WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 1st Semester Examination, 2020, held in 2021

PHYACOR02T-PHYSIOLOGY (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.
All symbols are of usual significance.

Answer any *five* questions from the following   8×5 = 40

1. (a) State the differences between centrifugation and ultracentrifugation.   2
   (b) Define absolute viscosity. What is shear rate?   2+2
   (c) State two properties of pseudoplastic fluid.   2

2. (a) What are cohesive and adhesive forces?   3
   (b) Explain the mechanism of action of basic buffers.   3
   (c) What is buffer capacity?   2

3. (a) State the differences between SDS-PAGE and native-PAGE.   2
   (b) What are mobile phase and stationary phase in paper chromatography?   2+2
   (c) What is molecular sieving?   2

4. (a) Elaborate on cell-fractionation technique.   3
   (b) State the differences between lyophilic sols and lyophobic sols.   3
   (c) What is Gold number?   2

5. (a) State the second law of thermodynamics and how it is related with entropy.   2
   (b) What is K_m? Discuss the different characteristics of K_m.   2+2
   (c) Define activation energy.   2

6. (a) Give diagrammatic representation of Donnan membrane equilibrium.   2
   (b) What is critical point?   1
   (c) Define endosmosis with proper example.   2
   (d) What is salting out?   2
   (e) What is isoelectric pH?   1

7. (a) Derive Michaelis-Menten equation for enzymes.   3

   (b) What are noncompetitive and uncompetitive inhibition?   3

   (c) What is allosteric modulation?   2

8.   Write short notes: 2×4 = 8

   (a) Van't Hoff's law

   (b) Rate limiting enzymes

   (c) Ribozymes

   (d) Radioimmunoassay.

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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