



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 1st Semester Examination, 2020, held in 2021

**PHYACOR01T-PHYSIOLOGY (CC1)**

**CELLULAR BASIS OF PHYSIOLOGY**

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) Describe the structure of microtubules. 4+2+2  
(b) What is membrane asymmetry?  
(c) State the factors affecting membrane fluidity.
  
2. (a) Explain the mechanism of action of SMAD pathway. 4+4  
(b) What are the functions of cell adhesion molecules (CAMs)?
  
3. Differentiate between the following: 2×4 = 8  
(a) Voltage gated ion channels and ligand gated ion channels.  
(b) Active transport and passive transport.  
(c) Tight junction and gap junction.  
(d) Lysosome and peroxisome.
  
4. (a) Mention the role of nitric oxide (NO) as a cell signalling molecule. 4+2+2  
(b) What is second messenger system?  
(c) What is ionophore?
  
5. (a) Mention the role of cyclins and Cdks in cell cycle. 4+4  
(b) What is JAK-STAT pathway?
  
6. (a) What is synaptonemal complex? 2+2+4  
(b) What is endocytosis?  
(c) Describe the cytological events in anaphase.

7. (a) What are the major causes of aging? 2+2+2+2  
(b) What is dynein?  
(c) What is the significance of G<sub>0</sub> phase?  
(d) What is tetrad?
8. (a) What is homeostasis? 2+2+4  
(b) What are the components of homeostatic system?  
(c) Describe the negative homeostatic control system with an example.

**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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