



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 3rd Semester Examination, 2020, held in 2021

**MCBACOR06T-MICROBIOLOGY (CC6)**

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.*

**Question No. 1 is compulsory and attempt any *four* questions from the rest**

1. Answer any *four* questions from the following: 2×4 = 8
  - (a) Define autophagy.
  - (b) What are TIM and TOM complexes?
  - (c) Classify Golgi according to its major section and state their functions.
  - (d) What is the function of the centromere?
  - (e) What is the role of SRP in ER directing protein?
  - (f) What is the role of Phosphodiesterases in cAMP dependent GPCR mediated pathway?
  - (g) Explain the roles played by the M phase Cyclins.
  
2.
  - (a) What is cotranslational transport for secretory protein? 3+3+2
  - (b) How the lysosomal proteins are modified in Golgi apparatus?
  - (c) What is NPC and NLS?
  
3.
  - (a) Explain the cAMP pathway of signal transduction pathway. 3+1+3+1
  - (b) What is Chiasma?
  - (c) How is a polypeptide translocated in the lumen of the endoplasmic reticulum?
  - (d) What are the constituents of the prokaryotic ribosomes?
  
4.
  - (a) What is local histone acetylation? What are its consequences? (1+2)+(3+2)
  - (b) What is PEP group translocation? What are the ligands of G-protein coupled receptor?

5. (a) How are mature lysosomes formed? 3+2+3  
(b) What are the different fates of the proteins after reaching the Golgi complex?  
(c) What are euchromatin and heterochromatin?
6. (a) How membrane proteins are solubilised? 2+2+2+2  
(b) What is meant by the synaptonemal complex?  
(c) State the different types of Nuclear Lamina Associated Polypeptides and their functions.  
(d) What is the difference between a chloroplast and a leucoplast?
7. (a) What do you understand by cognate partners with respect to Cdks? 2+2+3+1  
(b) Mention one difference between the G1 phase and the G2 phase of the cell cycle.  
(c) Membrane asymmetry has biological significance — Justify the statement.  
(d) What is APC with respect to cell cycle?
8. (a) Membrane carbohydrates are involved in cell selection/recognition — Justify the statement. 3+2+2+1  
(b) What are different types of ligand gated channels?  
(c) What is Transcytosis?  
(d) What are COPI coated vesicles?

**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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