



WEST BENGAL STATE UNIVERSITY

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

MCBHGE01T/MCBGCOR01T-MICROBIOLOGY (GE1/DSC1)

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.

Answer Question No.1 and any four questions from the rest

1. Answer any **four** questions from the following: 2×4 = 8
 - (a) Name one Gram-positive pathogenic bacteria and one Gram-negative pathogenic bacteria.
 - (b) What are the different morphologies of bacteria?
 - (c) What is the difference between flagella and pili?
 - (d) Define viroid and prion. Cite an example of each.
 - (e) What is the difference between simple and complex media?
 - (f) What are inclusion bodies?
 - (g) What are the functions of SEP and RER?

2. (a) Write briefly about the composition of the prokaryotic ribosomal subunits. 3+(3+2)
(b) How is the nucleoid arranged? Name two bacteria that can form endospores.

3. (a) What is the difference between capsules and endospores? 2+4+2
(b) Explain the structure of cell wall of Gram-positive bacteria with a simple diagram.
(c) What do you mean by a plaque?

4. (a) What is the difference between selective and differential media? Give an example of each. 3+3+2
(b) Explain the method of serial dilution method (with proper diagram).
(c) Why are enrichment media used for cultivating bacteria?

5. (a) What is a plasmid? 2+4+2
(b) Explain different phases of bacterial growth curve with a proper diagram.
(c) How can you preserve a bacterial strain for long periods of time?

6. (a) Write short notes on: (3+2)+2+1
(i) Lytic cycle of bacteriophage
(ii) Capsid structure of HIV.
- (b) What are temperate phages?
(c) Why is HIV called a retrovirus?
7. (a) Briefly describe the process of isolation of single colony from a soil sample. 3+3+2
(b) Write down the genetic map of the lambda phage.
(c) Mention any two features of the T4 phage.
8. (a) Differentiate the viruses on the basis of capsid symmetry. 2+2+4
(b) What is the genetic material of
(i) TMV
(ii) Cauliflower mosaic virus.
(c) Explain the one-step growth curve of bacteriophages with a proper diagram.
9. (a) Which bond of the peptidoglycan is cleaved by lysozyme? 1+3+2+2
(b) What is the composition of bacterial LPS layer? What is the function of LPS?
(c) What do you mean by periplasmic space?
(d) What are the different types of Hepatitis viruses?

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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