



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2021-22

MCBACOR02T-MICROBIOLOGY (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.*

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

1. Answer any *four* questions from the following: 2×4 = 8
- (a) Name a basic and an acidic dye.
 - (b) What is auxotroph?
 - (c) What is mesosome?
 - (d) What are firmicutes?
 - (e) Name one radiation resistant bacteria. What is MRad?
 - (f) What are methanogens?
 - (g) Name one epsilon and zetaproteobacteria each.
2. (a) Discuss the general characteristics of High G+C content bacteria. 3
- (b) What is acid fast staining? Give an example. 2
- (c) Write the basic mechanism of lactophenol cotton blue staining. 3
3. (a) How can you physically control microbial growth by 2×2 = 4
- (i) dessiccation
 - (ii) osmotic pressure.
- (b) Write short notes on: 2×2 = 4
- (i) Disinfectants and antiseptics
 - (ii) Synthetic media and glycocalyx.
4. (a) What is HEPA filter? 2
- (b) What are ROS? Give the mechanism in brief. 1+2
- (c) What are L-forms? 2
- (d) What is nucleoid? 1

5. (a) Discuss the chemical composition of archaebacterial cell wall. 3
(b) What are the different stages of sporulation found in Endospore? 3
(c) Write one example of each Nanoarchaeota and Crenarchaeota. 2
6. (a) What is culture media? What is LB broth? 1+1
(b) Compare between streak plate and pour plate method. $1\frac{1}{2}+1\frac{1}{2}$
(c) Why aerobes can grow in presence of air? 2
(d) What is phenol coefficient? 1
7. (a) What is endoflagella? 2
(b) What are Photolithoautotrophs? Give examples. 2+1
(c) Write short notes on: $1\frac{1}{2}+1\frac{1}{2}$
(i) *Sulfolobus*
(ii) *Pyrococcus*
8. (a) Write short notes on: $2\times 2 = 4$
(i) Synchronous growth
(ii) Endospore staining.
(b) What are alpha and beta proteobacteria? Give examples. $1\frac{1}{2}+1\frac{1}{2}$
(c) What is a complex media? 1

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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