

U.G. 3rd Semester Examination - 2021
Molecular Biology & Biotechnology
[HONOURS]

Course Code : MBBT-H-302-T-CCR-6

(General Microbiology)

Full Marks : 40

Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** of the following : 2×5=10
 - a) Give one example of macrolide. How does it work?
 - b) Write down the major four differences between eukaryotic and prokaryotic cells.
 - c) What is an amphibolic pathway?
 - d) What is lyophilization?
 - e) What is peptidoglycan?
 - f) Define "species" and "strain".
 - g) What is HEPA filter?
 - h) What is a chemostat culture?
2. Answer any **two** of the following: 5×2=10
 - a) Schematically draw a typical eukaryotic algal cell. Compare bacterial and fungal cell walls.

3+2=5

[Turn over]

- b) What is a pure culture? Why is pure culture isolation important? Briefly discuss the steps to isolate bacteria from a soil sample. 1+1+3=5
 - c) Define the major nutritional types of microorganisms. 5
 - d) What is foodborne intoxication? What is botulism? How is Yogurt produced? 1+2+2=5
3. Answer any **two** of the following: 10×2=20
 - a) Describe generation of the proton motive force during aerobic respiration. How does the proton motive force generate by electron transport driven ATP synthesis? 7+3
 - b) What is fertility factor? What are *Hfr* Conjugation and *F'* (*F* prime) conjugation? What are generalized and specialized transduction? 1+2+2+5=10
 - c) Discuss the factors affecting microbial growth in food. Why is low temperature effective in preserving food? Give an example of spore producing bacterium. State the different factors which may trigger sporulation in bacteria. 4+2+1+1+2=10
 - d) How can you assess polluting strength of sewage? Discuss methods of aerobic secondary sewage treatment. 4+6=10