



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 1st Semester Examination, 2023

CC2-MICROBIOLOGY
BACTERIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any **five** of the following: 1×5 = 5
 - (a) What are plasmids?
 - (b) What are heterocysts?
 - (c) What is glycocalyx?
 - (d) What do you mean by synthetic media?
 - (e) What is difference between resolution and magnification?
 - (f) What is ribotyping?
 - (g) Name the reagents used for acid-fast staining.
 - (h) What is signature sequencing?

2. Answer any **three** of the following: 5×3 = 15
 - (a) Describe the fluid mosaic model of cytoplasmic membrane. 5
 - (b) What is generation time? Discuss the mathematical expression of generation time. 2+3
 - (c) What are the advantages of electron microscopes over the light microscope? What factors are involved in the resolution power of bright-field microscope? 3+2
 - (d) Describe molecular approaches to polyphasic bacterial taxonomy. 5
 - (e) What components constitute the LPS layer of gram(-)ve bacteria? Explain it. 5

3. Answer any **two** of the following: 10×2 = 20
 - (a) Differentiate among antiseptic and disinfectant. Discuss the mechanism of microbial control by moist heat, dry heat and gamma radiation. 4+6
 - (b) Describe the different phases of growth of bacteria. What do you understand by binary fission and budding? 7+3
 - (c) Elucidate the different stages of endospore sporulation. Why is endospore heat resistant? 7+3
 - (d) Write short notes on: 5+5
 - (i) Molecular and physiological adaptation of thermophiles
 - (ii) Ultrastructure of gram negative bacterial flagella.

—x—