



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours Part-II Examination, 2022

MICROBIOLOGY

PAPER-IV

Time Allotted: 4 Hours

Full Marks: 70

The figures in the margin indicate full marks.

1. Answer the following questions: 1×11 = 11
- (a) Define enrichment culture.
 - (b) Define aerobic respiration.
 - (c) What is HEPA filter?
 - (d) What is the role of 70% alcohol?
 - (e) What are acidophiles?
 - (f) What is the measurement of bacterial growth?
 - (g) What is KDPG?
 - (h) Draw the structure of one amino acid from glutamate family.
 - (i) What do you mean by oxidative phosphorylation?
 - (j) What do you mean by cryopreservation?
 - (k) Write the full form of NAD(P)H.
2. Answer any *two* of the following questions: 16×2 = 32
- (a) Describe in detail, the various factors influencing enzyme activity. 16
 - (b) Classify antibiotics on the basis of mode of action. 16
 - (c) Illustrate the biosynthesis of ethanol in *Pseudomonas saccharophila*. 16
 - (d) Describe the role of macro-elements in microbial nutrition. 16
3. Answer any *three* of the following: 9×3 = 27
- (a) Derive the Michaelis-Menten equation of enzyme kinetics. 9
 - (b) Describe the pathway leading to homolactic fermentation. 9
 - (c) Write a note on different photosynthetic pigments. 9
 - (d) Illustrate biosynthesis of glutamine and glutamic acid in bacteria. 9
 - (e) Briefly explain the mechanism of growth in continuous culture. 9

—×—