



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours Part-III Examination, 2022

BOTANY

PAPER-IX

Time Allotted: 4 Hours

Full Marks: 80

The figures in the margin indicate full marks.

1. Answer **all** the questions: 2×8 = 16
- (a) What is concatenation?
 - (b) What is meant by sexduction?
 - (c) Name two endospore forming bacteria.
 - (d) What is Jaccard's Coefficient?
 - (e) Define secondary inoculum with example.
 - (f) What is fusogen?
 - (g) What are phytoalexins?
 - (h) What is xylogenesis?
2. Answer any **two** questions: 16×2 = 32
- (a) Describe the structure and chemistry of the cell wall of a gram-positive bacterium. Compare the main structural differences between the cell wall of *Escherichia coli* and that of *Staphylococcus aureus*. 12+4 = 16
 - (b) Discuss the biochemistry of atmospheric nitrogen fixation in leguminous plants. 16
 - (c) Describe the symptoms, causal organisms, disease cycles and control measures of (2+1+3+2) × 2 = 16
 - (i) Brown spot of rice
 - (ii) Late blight of potato.
 - (d) What is totipotency? What is the importance of somatic hybridization? Describe the process of protoplast isolation and culture. 2+4+10 = 16
3. Answer any **four** questions: 8×4 = 32
- (a) Differentiate between flagella and pili. 8
 - (b) Describe with a labelled diagram the structure of T-4 phage. 8

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- (c) Describe the mechanism of specialized transduction. 8
- (d) Write a note on forecasting of plant disease epidemics. 8
- (e) Write notes on: 4×2 = 8
- (i) Quarantine regulation
 - (ii) Koch's postulates.
- (f) Describe the protocol for the study of cytodifferentiation. 8

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