



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 4th Semester Examination, 2023

CC8-MICROBIOLOGY
(MICROBIAL GENETICS)

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) Why is Ames test done? 1
 - (b) Name the first eukaryotic organism whose genome was completely sequenced. 1
 - (c) Define site directed mutagenesis. 1
 - (d) Give an example of physical mutagen. 1
 - (e) What are base analogs? 1
 - (f) Define homologous recombination. 1
 - (g) What is composite transposon? 1
 - (h) Give an example of intergenic suppression. 1

2. Answer any **three** questions from the following: 5×3 = 15
 - (a) Discuss about the P elements in Maize. 5
 - (b) Define transformation. Discuss the mechanism of natural competence. 1+4
 - (c) Discuss about the different types of plasmids with suitable examples. 5
 - (d) Write in detail about the genome organisation of *Saccharomyces* sp. 5
 - (e) Write a note on the significance of "Plasmid curing". 5

3. Answer any **two** questions from the following: 10×2 = 20
 - (a) Write short notes on: 5+5
 - (i) Insertion Sequences
 - (ii) Ti Plasmid.
 - (b) With suitable diagram discuss the process of specialized transduction. Write in short about interrupted mating technique. 5+5
 - (c) Describe with a suitable diagram the process of plasmid replication. What do you mean by transposition? Discuss in detail. 6+4
 - (d) Explain the genetic basis of Lytic vs Lysogenic switch of Lambda phage with suitable diagram. 6+4

Add a note on the factors that determine plasmid copy number.

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