



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 4th Semester Examination, 2022

CC8-MICROBIOLOGY

MICROBIAL GENETICS

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any **five** questions from the following: 1×5 = 5
- (a) What is IS?
 - (b) What is tautomerism?
 - (c) Define transverse mutation.
 - (d) What is lambda repressor?
 - (e) What do you mean by suppressor mutation?
 - (f) Name two virulence plasmid.
 - (g) What are base analogues?
 - (h) What are episomes?
2. Answer any **three** questions from the following: 5×3 = 15
- (a) Describe in detail the process of HFT and LFT lysate generation. 5
 - (b) With suitable example describe the molecular basis of mutation. 5
 - (c) What is an F' strain? What is meant by sexduction? Why an Hfr cell is named so? 1+2+2
 - (d) What is a helper virus? Differentiate between generalized and specialized transduction. 1+4
 - (e) Write about plasmid incompatibility. 5
3. Answer any **two** questions from the following: 10×2 = 20
- (a) Write down in detail the genetic basis of lytic versus lysogenic switch of the lambda phage. 10
 - (b) Write short notes on: 2½ × 4 = 10
 - (i) F plasmid
 - (ii) R plasmid
 - (iii) Colicinogenic plasmid
 - (iv) Ti plasmid.
 - (c) Describe the genome organization of *E. coli*. 10
 - (d) What is homologous recombination? Give a detailed account of transposition process. 2+8

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