



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 6th Semester Examination, 2022

CC14-MICROBIOLOGY

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 is homopolymer tailing?
 - (b) What is primer walking?
 - (c) Mention two basic differences between genomic and c-DNA libraries.
 - (d) What are type-II restriction enzymes?
 - (e) What is phagemids?
 - (f) What selection markers are present in plasmid vector pBR322?
 - (g) State the difference between Reverse transcriptase PCR and Real time PCR.
 - (h) What is the function of SDS in SDS-PAGE?

2. Answer any **three** of the following: 5×3 = 15
 - (a) Write a brief note on Northern Blotting. 5
 - (b) What are lambda insertion and replacement vector? Mention the applications of M13 vector. 4+1
 - (c) Compare between Type I, Type II and Type III restriction enzymes. 5
 - (d) Briefly describe the features and uses of cloning vector pBR322. 5
 - (e) Write a short note on colony hybridization. 5

3. Answer any **two** of the following: 10×2 = 20
 - (a) How does pUC18 be used for the cloning of a foreign DNA segment, explain in detail. How the recombinants are selected by Blue-White screening method? 4+6
 - (b) Schematically explain the preparation of c-DNA library. What are the applications of c-DNA library? What are isoschizomers and neoschizomers? 6+2+2
 - (c) Describe principle, methodology and applications of Western blotting. 3+5+2
 - (d) Discuss the Sanger's method of DNA sequencing with suitable diagram. Write a short note on shotgun cloning. 6+4

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