

2020

MICROBIOLOGY — GENERAL

Paper : DSE-A-1

(Genetic Engineering And Biotechnology)

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Day 1

Group - A

1. Answer **any five** questions : 2×5
- (a) Write down two features of Ti plasmid.
 - (b) Give two properties of a bacterial host.
 - (c) What chemical is used in chemical transformation of *E.Coli*? Who developed Southern Blotting technique?
 - (d) What are used as probes in Southern and Western Blotting?
 - (e) Give two examples of type II restriction enzyme.
 - (f) What are the enzymes used in RTPCR?
 - (g) What is the full form of SDS-PAGE?
2. Write short notes on (**any three**) : 5×3
- (a) Genomic DNA library
 - (b) Sanger dideoxy sequencing
 - (c) Dot Blot Technique
 - (d) Bt Brinjal
 - (e) Western blotting technique.

Group - B

Answer **any five** from the following.

3. (a) Write down a difference between Type I and Type II restriction enzymes.
- (b) How does bacteria protect its own DNA from restriction enzymes?
- (c) Give one example each of blunt end cutter and sticky end cutter restriction enzymes. 2+1+2

Please Turn Over

4. Write notes on : 2½×2
- (a) Patent
 - (b) Cloning vector
5. Write down two characteristics features each of BAC and YAC vectors. What is YEP? 2+2+1
6. Write a note on Electroporation technique. 5
7. Why do we need directional cloning and how it is performed? 2+3
8. (a) How do you label a probe used in Southern blotting?
(b) What is capillary blotting used in Southern hybridization? Describe with a suitable diagram. 2+3
9. Schematically describe the steps of a typical Polymerase Chain Reaction (PCR). 5
10. (a) What are the properties of a good vector?
(b) What are cloning and expression vectors? 3+2
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