

M.Sc. (Micro) Semester - 3 (CBCS) Examination
OCT/NOV-2024 (AS PER SYLLABUS YEAR JUNE-2019)
Genetic Engineering and Protein Engineering (Core (New))

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

SECTION-I

Que-1 Answer the following

(A) Write a note on types and cleavage site of restriction endonuclease. (07)

(B) Write a note on homopolymer tailing. (07)

OR

Que-1 Discuss the DNA ligation by end modification and by PCR product. (14)

Que-2 Answer the following

(A) Write a note on phagemid with its advantages. (07)

(B) Discuss PBR322 in detail. (07)

OR

Que-2 Explain the Lamda phage with its advantage over the other vectors. (14)

Que-3 Do as direct (any seven) (07)

- (1) What is cos sit ? Explain its function.
- (2) Define the function of Lysosome.
- (3) Explain the Klenow fragment.
- (4) What is MCS?
- (5) Explain the Chimeric vector.
- (6) Define the methylation.
- (7) Define the the poly-A tails and its advantage.
- (8) Explain the function of IPTG.

SECTION-II

Que-1 Describe the construction of cDNA library in detail. (14)

OR

Que-1 Answer the following

(A) write a note on differential cloning. (07)

(B) write a note on gene transformation in plants. (07)

Que-2 Define the direct mutagenesis and discuss the its tools and techniques. (14)

OR

Que-2 Answer the following

(A) Explain Phage display systems mention its advantage. (07)

(B) Explain His-tag purification. (07)

Que-3 Do as direct (any seven) (07)

- (1) Explain the therapeutic protein.
- (2) Define marker gene.
- (3) What is microarray?
- (4) Explain the the concept of safety in GMO.
- (5) Enlist the DNA hybridization techniques.
- (6) Explain the role of RT-PCR in gene cloning.
- (7) Explain the bacterial typing microarrays.
- (8) Explain the application of PCR in mutagenesis.
