

S.No. 58

12PBT05

(For the candidates admitted from 2012–2013 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2017.

Second Semester

Biotechnology

GENETIC ENGINEERING

Time : Three hours

Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) Explain the role of Ligases in genetic engineering.

Or

- (b) Comment on Polynucleotide Kinase.

2. (a) What are Cosmids? Explain the characteristic features of cosmids.

Or

- (b) Describe the Construction of pBR 322 with a neat diagram.

3. (a) Explain the use of Vector NTI in silico analysis.

Or

(b) Explain the principle of Micro array technique? Mention the types of microarrays.

4. (a) Explain the protocol adopted in maintaining Mammalian cell lines.

Or

(b) How Recombinant proteins are obtained?

5. (a) What are Transgenic fish? How it is obtained?

Or

(b) Explain the stages involved in Delayed ripening.

SECTION B – (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) What are Restriction enzymes? Explain the types of Restriction enzymes and their role.

Or

(b) Explain the role of Homopolymer Tailing in cDNA cloning.

7. (a) Discuss about Prokaryotic Expression vectors.

Or

(b) Describe the construction of Genomic library.

8. (a) Explain the principle, protocol and applications of PCR.

Or

(b) Explain the principle, protocol and applications of Northern blotting technique.

9. (a) Discuss about Gene expression in bacteria.

Or

(b) Explain the Characterization of recombinant proteins.

10. (a) What is Gene therapy? Explain its application in field of medicine and add a note on advantage and disadvantages of gene therapy.

Or

(b) How are Transgenic plants obtained? What are advantage and disadvantages?