S.No. 299

08PAMZ03

(For the candidates admitted from 2008-2009 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2017.

Third Semester

Applied Microbiology

GENETIC ENGINEERING

Time : Three hours   Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

1. (a) How will you isolate the DNA from microbes? Explain.

   Or

   (b) Give an account on principle and applications of pulse field gel electrophoresis.

2. (a) Write short notes on type I restriction endonuclease enzyme.

   Or

   (b) List out the applications of polymerases.

3. (a) Explain the Sanger method of sequencing of DNA.

Or

(b) Write short notes on automated DNA sequencing.

4. (a) Comment on the M_{13} phage vector.

Or

(b) Write an account on artificial chromosomes.

5. (a) Explain the bacteriophage vector.

Or

(b) How to clone the genomic DNA? Explain.

PART B — (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) Write notes on :

(i) Nick translation

(ii) Labelling by Primer extension.

Or

(b) Differentiate the Southern and Western blotting techniques.

7. (a) Describe the nomenclature and applications of type II restriction endonuclease enzyme.

Or

(b) Explain in detail about the DNA ligase enzyme.

8. (a) Write a detailed account on Maxam-Gilbert's method of sequencing of DNA.

Or

(b) Describe the principle and applications of PCR technique.

9. (a) Plasmids used for E. Coli – Discuss.

Or

(b) Explain in detail about the expression vectors.

10. (a) Give a detailed account on synthesis of cDNA.

Or

(b) Write an essay on genomic library.

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