

MAY 2012

P/ID 40229/PBTJ

Time : Three hours

Maximum : 100 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 50 words.

Write short notes on :

1. Transcription.
2. Absorption spectrum.
3. T_m value of DNA.
4. Plasmids.
5. DNA gyrase.
6. Termination signals.
7. Degeneracy of Genetic code.
8. Attenuation
9. Taq polymerase.
10. Ri plasmid.

PART B — (5 × 6 = 30 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 250 words.

11. (a) Explain the basic principle of density gradient centrifugation.

Or

- (b) Outline the technique of agarose gel electrophoresis and its importance.

12. (a) Briefly explain the process of DNA methylation.

Or

- (b) Write an account on the types of restriction enzymes and its significance with examples.

13. (a) Describe the method of isolation of nucleic acids.

Or

- (b) Write short notes on YAC vector.

14. (a) Explain the structure of Ti plasmid and highlight the importance of T-DNA.

Or

- (b) Write short notes on :

- (i) Cosmids
- (ii) Microinjection.

15. (a) Write an account of the role of Intellectual Property Rights.

Or

- (b) Give an account on Drug targeting.

PART C — (5 × 10 = 50 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 500 words.

16. (a) With the help of a box diagram, explain the working function of UV-VIS spectrophotometer. Discuss its advantages.

Or

- (b) Discuss the replication of DNA in eukaryotic systems.

3 **P/ID 40229/PBTJ**

17. (a) Outline on Post-transcriptional processing of mRNA.

Or

- (b) Describe the regulation of lac operon in *E.coli*.

18. (a) Give an account of the rDNA technology in general.

Or

- (b) What are transgenics? Discuss the physical methods of gene transfer.

19. (a) Describe the procedures involved in the development of pest resistance in crops.

Or

- (b) Explain the principle, procedure and applications of Southern Hybridization.

20. (a) Write an essay on the patenting of biological material.

Or

- (b) Explain the technique of DNA microarray and its applications.