

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – ADVANCED ZOOLOGY AND BIOTECHNOLOGY

FIFTH SEMESTER – APRIL 2016

AZ 5520/AZ 5514/AZ 5507 – GENETIC ENGINEERING

Date: 06-05-2016

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

PART – A

Answer **ALL** questions, each in a few words

(10 × 2 = 20 marks)

01. Define genetic engineering.
02. What is semi-conservative replication?
03. What are plasmids? Where are they found?
04. What are bacteriophages? Cite an example.
05. What is a nuclease? Give an example.
06. Comment on *HindIII*.
07. What is a recombinant organism?
08. What is DNA probe?
09. Give any two examples of environmental issues associated with living GMOs.
10. Define gene therapy.

PART B

Answer any **FOUR** questions, each in about two pages

(4 × 10 = 40 marks)

11. Compare and contrast the prokaryotic and eukaryotic genomes
12. Mention any five differences between DNA replication and transcription.
13. Explain any five physical methods of gene delivery.
14. Discuss the uses of bacteriophages in genetic engineering.
15. What are vectors in genetic engineering? Describe any two types of vectors.
16. Illustrate the genome organization in eukaryotes.

PART C

Answer any **TWO** questions, each in about 4 pages

(2 × 20 = 40 marks)

17. Give an illustrated account of DNA molecular structure and function.
18. Discuss the applications of genetic engineering in health care.
19. Explain in detail the selection, screening and analysis of recombinants.
20. Write explanatory notes on: (i) Genetically modified crops; (ii) Adaptors and linkers; (iii) Types of RNA; (iv) M13 Bacteriophage.

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