# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**M.Sc.** DEGREE EXAMINATION – **ZOOLOGY** 

FOURTH SEMESTER - APRIL 2023

## PZO 4502 – BIOTECHNOLOGY

Date: 03-05-2023 Dept. No. Time: 09:00 AM - 12:00 NOON

## PART A

## Answer ALL the questions

- 1. Differentiate between isoschizomers and neoschizomers.
- 2. What are linkers?
- 3. Comment on DNA microinjection.
- 4. Draw and label the structure of an *E. coli*-Yeast shuttle vector.
- 5. Define tissue engineering giving a suitable example.
- 6. Name any two animal cell culture media.
- 7. How can biofuels be produced?
- 8. What is meant by microbial bioremediation?
- 9. Enlist any two ethical issues concerning genetically modified organisms.
- 10. Expand the following: (i) VNTR (ii) SNP.

### PART B

### Answer any FOUR questions

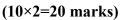
- 11. Explain the screening of libraries using colony hybridization and colony immunoassay.
- 12. Describe the bacteriophage lambda vector.
- 13. Discuss the procedure for establishing primary cultures of animal cells.
- 14. Write a note on microbial biopolymers.
- 15. Explain how biotechnology can be used for environmental applications.
- 16. Enlist any ten points to be considered while designing PCR primers.

## PART C

## Answer any TWO questions

- 17. Discuss the procedures for creation of genomic and cDNA libraries.
- 18. Describe mammalian cell expression vectors and their important features required for high-level transgene expression.
- 19. Explain the different methods used for production of transgenic mice.
- 20. Give an account of the applications of biotechnology in the healthcare industry.

#### **\$\$\$\$\$\$\$**



Max.: 100 Marks

(4×10=40 marks)

(2×20=40 marks)