MASTER'S DEGREE (C.S.S) EXAMINATION, FEBRUARY 2024
2022 ADMISSIONS SUPPLEMENTARY (SAY)
SEMESTER III - CORE COURSE Zoology
ZO3C12TM20 - Biotechnology

Time : 3 Hours

Maximum Weight : 30

Part A

I. Answer any Eight questions. Each question carries 1 weight

(8x1=8)

1. Explain the scope of biotechnology in agriculture.

2. Comment on pUC19 vector.

3. Comment on the principle of particle bombardment.

4. Explain the role of calcium chloride in chemical transfection method.

5. What is chromosome walking?

6. Explain the principle of DNA microarray.

7. Differentiate between monolayer cultures and suspension cultures.

8. Write a short note on warm trypsinization.

9. What is GATT?

10. What is meant by biological containment?

Part B

II. Answer any Six questions. Each question carries 2 weight

(6x2=12)

11. Explain vectors with combination of features with suitable examples.

12. Explain the construction of cDNA library.

13. Explain a bacteriophage based vector. Why are bacteriophages preferred to plasmids in gene cloning experiments?

14. Explain the steps involved in sanger and coulson method of DNA sequencing. Mention its applications.

15. Write notes on automated DNA sequencers.

16. Write a note on enzymatic method of disaggregation of tissues.

17. Write an elaborate note on plant breeder's right.

18. Elaborate on the different types of intellectual property rights.

Part C

III. Answer any Two questions. Each question carries 5 weight

(2x5=10)

19. Write an elaborate essay on how restriction modification in bacteria led to the discovery of restriction enzymes. Compare the different classes of restriction enzymes with examples.

20. Write an essay on the different methods that are used for transferring rDNA molecule into the suitable host cell.

21. Explain the principle of polymerase chain reaction. Explain in detail the variations of PCR. Mention its applications.

22. Write an elaborate essay on the basic techniques of mammalian cell culture.