TM2533778K

Reg. No : 31/10/25

Name :

MASTER'S DEGREE (C.S.S) EXAMINATION, OCTOBER 2025

2024 ADMISSIONS REGULAR

SEMESTER III - CORE COURSE

ZOSC12TM20 - Biotechnology

Time : 3 Hours

Maximum Weight : 30

Part A

I. Answer any Eight questions. Each question carries 1 weight (8x1=8)

1. Comment on pUC19 vector.
2. What are shuttle vectors?
3. Explain the blunt end and sticky ends produced by restriction enzymes.
4. Comment on electroporation.
5. Write a note on touchdown PCR.
6. Define gene cloning. Illustrate the steps involved with the help of a neat diagram.
7. Write a note on nomenclature of cell lines. Give examples.
8. Explain the importance of serum in tissue culture media.
9. What is GATT?
10. Write a note on WIPO.

Part B

II. Answer any Six questions. Each question carries 2 weight (6x2=12)

11. What are restriction enzymes? Write a note on type II restriction enzymes.
12. Explain in detail construction of genomic library.
13. Differentiate between Lamda vectors and M13 based vectors.
14. Explain the steps involved in Maxam Gilbert method of DNA sequencing. Mention its applications.
15. Write notes on automated DNA sequencers.
16. Explain the principle and working of Biochips. Mention their applications.
17. Elaborate on the different types of intellectual property rights.
18. Write notes on operation of a bioreactor. Add notes on various substrates used as medium in bioreactors.

Part C

III. Answer any Two questions. Each question carries 5 weight (2x5=10)

19. Write an essay on the different vectors used in rDNA techniques using neat diagrams. Mention what are the features of a good vector.
20. Elaborate and compare the biological method used for transferring rDNA molecules into a host.
21. Explain the principle of polymerase chain reaction. Explain in detail the variations of PCR. Mention its applications.
22. Write an essay on the different methods used for production of transgenic animals. Mention the applications of transgenic animals.