K23U 1157

Reg. No. : .....

Name : .....

IV Semester B.Sc. Degree (CBCSS – OBE – Regular/Supplementary/ Improvement) Examination, April 2023
(2020 Admission Onwards)
GENERAL AWARENESS COURSE IN LIFE SCIENCES (ZOOLOGY) AND COMPUTATIONAL BIOLOGY
4A14 ZCB : Genomics and Proteomics

Time : 3 Hours Max. Marks : 40

PART – A

Answer **all** questions. **Each** question carries **1** mark : **(6×1=6)**

1. What is SAGE ?
2. What are bait and prey ?
3. Name the enzyme used in pyrosequencing.
4. Abbreviate SADE.
5. Name the nucleic acid hybridisation technique to identify DNA.
6. Name 2 vectors used in the construction of genomic library.

PART – B

Answer **any 6** of the following questions. **Each** question carries **2** marks : **(6×2=12)**

7. Explain next generation sequencing.
8. What is the role of VNTRs in DNA fingerprinting ?
9. What are molecular markers ? Give 2 examples.
10. Comment on the implications of Human Genome Project.
11. What are the disadvantages of Maxam Gilbert sequencing ?

P.T.O.

12. Compare genetic Vs physical mapping.

13. Give the principle of FISH.

14. Comment on the role of primers in PCR reaction.

PART – C

Write short essay on **any four** of the following questions. **Each** question carries **3** marks : **(4×3=12)**

15. Write an account of SNP and SSLP markers.

16. Write the working principle of PCR. Name any 4 variants of PCR with their application.

17. What are the methods adopted for genome sequence acquisition and analysis ?

18. Write briefly on the principle and applications of FISH.

19. What are DNA libraries ? How will you construct a cDNA library ?

20. Explain the working principle of 2D gel electrophoresis, comment on its applications.

PART – D

Write essay on **any two** of the following questions. **Each** question carries **5** marks : **(2×5=10)**

21. Explain in detail about various chromatographic techniques used in proteomic analyses. Write their uses and applications.

22. Explain the working principle and stages of PCR with suitable diagram. List out the variations of PCR and their applications.

23. Discuss nucleic acid blotting/hybridisation techniques in detail. Comment on their applications.

24. Give a detailed account on the Principle, Instrumentation, and advantages of Mass spectrometry. How does it help in protein identification ?

———————