B.Sc DEGREE (CBCS)) REGULAR/ IMPROVEMENT/ REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

Fourth Semester

B.Sc Biological Techniques and Specimen Preparation Model III

Core Course - ZB4CRT10 - RADIOLOGY AND ADVANCED INSTRUMENTATION TECHNIQUES

2017 Admission Onwards

7B2CCE42

Time: 3 Hours

Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. What are radioactive emmisions?

2. Write two effects of radiation on biological system.

3. What are isotopes?

4. Which are the radioisotopes that can be detected by Gieger-Muller counter.

5. What is the use of instrument Liquid scintillation counter?

6. What is the use of instrument solid scintillation counter?

7. Write two methods for the disposal of radioactive waste.

8. Write the principle of confocal microscopy.

9. Define chromatography.

10. What is the charge of functional group in anioic exchanger?

11. What is the use of agarose gel electrophoresis in molecular Biology?

12. What is the purpose of using SDS in PAGE?

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Explain the different types of ionizing radiations.

14. Describe the different isotopes of biological use.

15. Explain autoradiography.

16. Explain the cleaning of radioactive waste contaminated glasswares.

17. Describe the principle of scanning probe micriscopy.

18. Explain the principle of gel filtration chromatography.

19. Explain the theory of High performance liquid chromatography.

20. Explain the principle of gas chromatography.

21. Describe the principle and process of PCR.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. Describe in detail pulse chase experiment.

23. Describe in detail the pecautions and safety measures of handling radioisotopes in radiolab.

24. Explain the procedures of two methods of DNA sequencing.

25. Explain the procedure of DNA fingerprinting with applications.

(2×10=20)