QP CODE: 25022294

25022294

Reg No : .....

Name : .....

M.Sc DEGREE (CSS) SPECIAL REAPPEARANCE EXAMINATION, APRIL 2025

Third Semester

M.Sc ZOOLOGY

CORE - ZL010303 - BIOPHYSICS,INSTRUMENTATION AND BIOLOGICAL TECHNIQUES

2019 ADMISSION ONWARDS

30484917

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Define Vant Hoff's laws.
2. What is Reactive Oxygen Species?
3. How are ionizing radiations different from non ionizing radiations?
4. What is microtomy?
5. Explain the staining of carbohydrate.
6. What are ultracentrifuges?
7. What is Gradient elution?
8. Comment on atomisation in AAS.
9. What are the uses of NMR spectroscopy?
10. Differentiate phosphorescence from fluorescence.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Describe the different internally administered radioisotopes and their uses.
12. Explain the working of Confocal microscope.
13. Explain the working of Scanning Electron microscope.

14. Comment on the applications of Fast Protein Liquid Chromatography and Gel Permeation Chromatography.

15. Write notes on Electrophoresis mobility shift assay (EMSA).

16. Explain general principle of Colorimeter.

17. What are the applications of LCMS in biomedical sciences?

18. Write down the applications of Bionanorobotics.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Ionizing radiations can damage living systems by affecting organisms and cells in general and biomolecules in particular. Justify the statement.

20. Explain the steps involved in permanent slide preparation of animal tissue.

21. Discuss about the working of Horizontal and vertical Gel electrophoresis.

22. Write an essay on principle, instrumentation and applications of FTIR and Circular Dichroism Spectroscopy.

(2×5=10 weightage)