

Second Semester M.Sc. Degree Examination (CSS) - Zoology
ZY2CT09 BIOPHYSICS, INSTRUMENTATION AND BIOLOGICAL
TECHNIQUES

Time: 3 Hours

Total weight: 30

Section I -Short answer type questions

Weight -1

Answer any 10 out of 12

1. Write notes on Fick's law of diffusion.
2. Comment on Van't Hoff's laws.
3. Briefly describe facilitated diffusion.
4. How does entropy differ from enthalpy.
5. Distinguish between redox couple and redox potential.
6. Comment on partition and adsorption in chromatography.
7. Distinguish between SDS and non SDS electrophoresis.
8. Briefly explain nanosensors and nanomedicines.
9. Explain Beer-Lambert law.
10. Comment on the uses of radioactive tracers.
11. Briefly describe resolving power and magnification in microscopy.
12. What are artificial membranes? Give examples.

Section II -Short essay type questions

Weight -2

Answer any 5 out of 8

13. Write notes on biological significance of osmosis in plants and animals.
14. Discuss the conformational properties of cell membranes.
15. Elaborate chemiosmotic theory.
16. Write a short essay on differential interference contrast microscopy.
17. Explain the different methods used in the detection and measurement of radiations.
18. Describe flame emission spectroscopy.
19. Discuss Gibbs-Donnan Membrane Equilibrium and its significance.
20. Write notes of ELISA.

Section III- Long essay type questions

Weight -5

Answer any 2 out of 3

21. Describe light and dark reactions of photosynthesis.
22. Give an account on the working and uses of different types of electron microscopes.
23. Write an essay on the principle and uses of ion exchange chromatography and gel permeation chromatography

1.

Weightage 5