

M.SC APPLIED FISHERIES AND AQUACULTURE EXAMINATION (CSS)

AFA1T03- BIOPHYSICS AND RESEARCH METHODOLOGY

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. Write notes on applied research.
4. How does entropy differ from enthalpy?
5. Distinguish between redox couple and redox potential.
6. Comment on partition and adsorption chromatography.
7. Distinguish between SDS and non SDS electrophoresis.
8. Briefly explain shadow casting.
9. Explain Beer-Lambert law.
10. Comment on the uses of radioactive tracers.
11. Briefly describe resolving power and magnification in microscopy.
12. Describe the principle and procedure of RIA.

Section II -Short essay type questions Weight -2

Answer any 5 out of 8

13. Write notes on biological significance of osmosis in fishes.
14. Discuss the alizarin preparation.
15. Elaborate chemiosmotic theory.
16. Write a short essay on phase contrast microscope.
17. Explain the different methods used in the detection and measurement of radiations.
18. Describe the steps involved in the preparation of research papers.
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.