

Model Question Paper
First Semester Zoology M.Sc. Degree Examination, June 2021
ZO: 213, Biophysics, Instrumentation and Computer Science

Time 3 hrs

Max Marks 75

- I. Answer any ten of the following each in a paragraph. Each Question carries 2 marks (10 x 2=20 marks)**
1. What is Ionization radiation?
 2. Give the uses of Electrophoresis
 3. Mention the scope of Nuclear Medicine
 4. Define the phenomenon of Fluorescence
 5. What are Nanosensors? List its uses
 6. What is MRI?
 7. What is principle behind AAS?
 8. Explain Single neuron recording and Patch clamping
 9. Comment on PET
 10. What is meant by Free Energy?
 11. Write a few sentences on e-mail
 12. What are the advantages of Radio waves?
 13. What are the prospects of Artificial Intelligence?
 14. Explain ROM & RAM
 15. Write a very brief note on I.P/O.P. Devices
- II. Answer any six of the following each not exceeding a page Each Question carries 4 marks (6 x 4=24 marks)**
16. What are radioisotopes? Comment on their uses
 17. Elaborate on different Electrophoresis methods
 18. Briefly describe about Ultracentrifugation and its application
 19. Differentiate between freeze fracture and freeze etching techniques
 20. Briefly describe the laser scanning confocal microscopy and its advantages
 21. Write a note on the density gradient centrifugation
 22. "Life as an auto catalytic system" – Explain
 23. Discuss the laws of thermodynamics
 24. Prepare a short note on the application of X-rays in biological studies
 25. Explain programming language C++
- III. Write short essay not exceeding two pages on any three of the following. Each question carries seven marks. (3x7=21 Marks)**
26. Explain number system with example
 27. Give an account on computer programme
 28. Discuss the principle and working of high speed and ultra-centrifuges. Mention their applications
 29. Write a short essay on principles of NMR and EMR spectroscopy and their application in biological science
 30. Elaborate on Detection & measurement of radiation
- IV. Answer any one of the following not exceeding four pages. The question carries ten marks. (1x10=10 Marks)**
31. Describe cellular and molecular effects of ionizing radiation
 32. Write an essay on the principle and functioning of TEM and SEM and comment on their applications