Reg. No ..... Name **18P135**

MSc DEGREE END SEMESTER EXAMINATION - NOVEMBER 2018

SEMESTER 1 : ZOOLOGY

COURSE : **16P1ZOOT03 ; BIOPHYSICS, INSTRUMENTATION AND BIOLOGICAL TECHNIQUES**

(For Regular - 2018 Admission & Supplementary - 2017 / 2016 Admissions)

Time : Three Hours Max. Marks: 75

Section A
Answer any 8 (2 marks each)

1. What do you mean by 'Donnan potential'? Comment on Gibbs-Donnan equilibrium.
2. Outline the salient features of Pinocytosis.
3. What do you mean by the term 'System'. Mention the different types of Systems.
4. What happens when X rays pass through matter?
5. Explain Piezo-electric effect.
6. Explain the unique features of Gas chromatography.
7. What are the common supporting media used in Electrophoresis?
8. Enlist the uses of colorimeter.
9. Define 'absorbed dose' of radiation.
10. Comment on nanorobots.
11. Give a brief description of ELISA.
12. Comment on soil pH meter.

(2 x 8 = 16)

Section B
Answer any 7 (5 marks each)

13. Prepare an explanatory note on Artificial membranes.
14. Compare the various interactions of radiation with matter.
15. Discuss the working of an Atomic force microscope.
16. Outline the features of Affinity chromatography.
17. Briefly explain the SDS PAGE technique. What are its advantages and applications?
18. Discuss the principle and methodology involved in colorimetrical estimation.
19. Explain differential centrifugation technique.
20. How nanomedicine can improve medicine delivery.
21. Describe Competitive ELISA and Sandwich ELISA.
22. Describe the fixation methods used for different types microscopy.

(5 x 7 = 35)

Section C

Answer any 2 (12 marks each)

23. Describe the Chemiosmotic hypothesis.
24. Electrophoresis is a power tool for separation of biomolecules. Substantiate.
25. Describe the basic principle involved in NMR spectral analysis and discuss features that can be analyzed using NMR spectroscopy.
26. Write an essay on radiation detection devices. Explain the technique used in personal dosimeters.

(12 x 2 = 24)