

D 72899

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Name.....⁶⁴

Reg. No.....

FIRST SEMESTER M.Sc. DEGREE EXAMINATION, DECEMBER 2014

(CUCSS)

Zoology

ZO1 CT 02—BIOPHYSICS AND BIostatISTICS

Time : Three Hours

Maximum : 36 Weightage

I. Answer the following :—

- 1 Explain the cause of 'Brownian Motion'.
- 2 What is 'Electrosmosis' ?
- 3 Explain Frequency modulation of sound.
- 4 What is meant by 'half life' ?
- 5 What is the use of Liquid scintillation counter ?
- 6 Explain precisely NMR.
- 7 What is meant by the Resolving power and Numerical Aperture of a Microscope ?
- 8 What is the principle of Ion Exchange Chromatography ?
- 9 What is the advantage of two dimensional PAGE ?
- 10 What are the audible ranges of Man, Dog and Bat ?
- 11 What is 'Radiation dosimetry' ?
- 12 Explain briefly the application of Chi-square test.
- 13 What is the importance linear regression equation ?
- 14 Precisely explain P-value.

(14 × 1 = 14 weightage)

II. Answer any *seven* of the following :—

- 15 Explain the application of class intervals in Statistics.
- 16 Differentiate between 'Parametric' and 'Non-Parametric' statistics.
- 17 Explain the different types of probability distributions.
- 18 Describe the method and principle of Autoradiography.
- 19 Explain the applications of Immuno Electrophoresis.

Turn over

- 20 Comment on the principle, working and applications of Scanning Electron Microscope.
- 21 Describe Isoelectric focussing. Comment on its significance.
- 22 Enumerate the Biological effects of Radiation.
- 23 Explain Henderson Hasselbalch equation.
- 24 Describe the principle and working of a Gas chromatographic system.

(7 × 2 = 14 weight)

III. Answer any *two* of the following :—

- 25 Describe the various components and functions of each of a high resolution light microscope.
- 26 Give an account of the Isotopes employed in Biological Research specifically explaining examples the application of each.
- 27 Explain the functional organisation of the ear and explain the mechanism of hearing.
- 28 Describe the 'Central Tendencies' and Dispersions in Statistics.

(2 × 4 = 8 weight)