D 33341 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER M.Sc. DEGREE EXAMINATION, FEBRUARY 2013

(CUCSS)

Zoology

ZO IC T-02—BIOPHYSICS AND BIOSTATISTICS

(2010 Admissions)

Time : Three Hours Maximum : 36 Weightage

I. Answer the following :—

1 What is "Tyndall effect" ?

2 Mention what "osmotic pressure" is.

3 Precisely explain what pH value is.

4 Briefly explain "place theory".

5 What is "Half life" ?

6 What are ionizing radiations ?

7 What is the relation between absorbance and transmittance ?

8 Briefly explain "circular dichroism".

9 Mention what patch clamp recording is .

10 Mention what "flow cytometry" is and what is application is ?

11 What is G force ?

12 What is P-value ?

13 Briefly explain Mann-Whitney test.

14 Precise explain what Poisson distribution is.

(14 × 1 = 14 weightage)

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

15 Comment on Type-I and Type-II errors.

16 What is sampling ? Describe the various sampling methods.

17 Distinguish between parametric and non-parametric statistics.

18 Describe the principle of echolocation.

19 Concisely explain this of autoradiography.

20 Comment on the applications of LASER in biology.

21 Briefly describe the fixation and staining techniques for Electron Microscopy.

22 What are the advantages of HPLC ?

23 Explain the statistical inference of hypothesis testing.

24 Comment on "Nuclear medicine".

(7 × 2 = 14 weightag

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

25 Explain "Henderson-Hasselbalch equation". How does it relate to a buffer ? Describe th principles involved in preparing a Buffer.

26 Explain the principle and working of a light Microscope. Describe the various components ar the function of each of a High Resolution Light Microscope.

27 Explain the biological effects of Radiation.

28 Describe the different types of "diagrammatic and graphical" ways of presenting data.

(2 × 4 = 8 weightag