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(Pages : 2)

Name..................................

Reg. No................................

FIRST SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, NOVEMBER 2020

(CBCSS)

Zoology

ZOL 1C 02—BIOPHYSICS AND BIOSTATISTICS

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend **all** questions in each section.*

2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*

3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Section A

I. Answer any *four* questions. Each carries 2 weightage :

   1 State Vant Hoff's laws.

   2 What are GM counters ?

   3 Write the properties of electromagnetic radiations.

   4 Explain ANOVA.

   5 State and explain Hendeson - Hasselbach equation.

   6 Distinguish between skewness and kurtosis.

   7 What is Chi-square test ?

$(4 \times 2 = 8 \text{ weightage})$

Section B

II. Answer any *four* questions. Each carries 3 weightage.

   8 Explain the physical organization of human ear.

   9 Describe the principle and applications of mass spectroscopy.

   10 Give an account of patch clamp technique.

Turn over

11 Explain the principle of HPLC.

12 Distinguish between census and sampling methods.

13 What is meant by correlation analysis ? Explain different types of correlation.

14 Give an account of Shannon diversity index and Simpson's dominance index.

$(4 \times 3 = 12 \text{ weighta...})$

Section C

III. Answer any *two* questions. Each carries 5 weightage :

15 Write an essay on the properties and biological importance of colloids.

16 Explain the biological effects of ionizing radiations.

17 Describe the principle and applications of SEM and TEM.

18 a) Briefly describe different measures of central tendency.

    b) Calculate arithmetic mean for the following data :

Class	:	10-14	15 -19	20-24	25-29	30-34	35-...
Frequency	:	3	16	26	31	16	8

$(2 \times 5 = 10 \text{ weight...})$