

D 93449**(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 Hendersen - Hasselbach equation.
- 6 Distinguish between skewness and kurtosis.
- 7 What is Chi-square test ?

(4 × 2 = 8 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 × 3 = 12 weightage)

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	35-39
Frequency	:	3	16	26	31	16	8

(2 × 5 = 10 weightage)