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FIRST SEMESTER M.Sc. DEGREE (C.B.C.S.S.) [REGULAR / SUPPLEMENTARY] EXAMINATION, NOVEMBER 2022

Zoology

ZOL 1C 02—BIOPHYSICS AND BIOSTATISTICS

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

Part A – BIOPHYSICS

I. Answer any *three* of the following :

1. Liquid scintillation counter.

2. Fick's law of diffusion.

3. ECG.

4. Circular dichorism.

5. Brownian movement.

(3 × 2 = 6 weightage)

II. Answer any *three* of the following :

6. Theories of pitch perception.

7. Autoradiography.

8. Applications of nanotechnology in the field of health care

9. Henderson-Hasselbalch equation.

10. NMR spectroscopy.

(3 × 3 = 9 weightage)

III. Answer any *one* of the following :

11. Explain the principle of SEM and TEM. Give a brief note on the fixation and staining techniques of EM.

12. Explain the principle and applications of Polyacrylamide Gel Electrophoresis. Add a note on Two dimensional PAGE

(1 × 5 = 5 weightage)

Turn over

Part B – BIOSTATISTICS

IV. Answer any *one* of the following :

    13. Shannon Index.

    14. Chi-square test.

V. Answer any *one* of the following :

    15. Regression analysis.

    16. t-test.

VI. Answer any *one* of the following :

    17. Explain the significance of standard deviation in biological studies.

        Following are the height of 10 plants represented in cm.

        73, 75, 80, 42, 57, 65, 52, 42, 47, 67.

        Calculate the Standard deviation using appropriate method.

    18. Describe the different types of probability distribution.