

D 32746

Name.....

Reg. No.....

**FIRST SEMESTER M.Sc. (CBCSS) [REGULAR/SUPPLEMENTARY] DEGREE
EXAMINATION, NOVEMBER 2022**

Zoology

ZOL1C01—BIOCHEMISTRY AND CYTOGENETICS

(2019 Admission onwards)

Time : Three Hours

Maximum Weightage : 30

Part A (Biochemistry)

I. Answer any *three* of the following :—

- 1 Transamination.
- 2 HDL and LDL.
- 3 Micro RNA.
- 4 Z DNA.
- 5 Heparin.

(3 × 2 = 6 weightage)

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

- 6 Regulation of fatty acid metabolism.
- 7 Role of ATP in the biological system.
- 8 Structure of hyaluronic acid and chondroitin sulphate.
- 9 Quaternary structure of protein.
- 10 Structure and function of Vitamin A.

(3 × 3 = 9 weightage)

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

- 11 Explain Electron transport system in mitochondria. Add a note on the mechanism of oxidative phosphorylation.
- 12 Discuss on factors affecting the enzyme action. Add a note on enzyme inhibition.

(1 × 5 = 5 weightage)

Turn over

Part B (Cytogenetics)

IV. Answer any *one* of the following :

13 Peroxisomes.

14 Glycocalyx.

(1 × 2 = 2 weightage)

V. Answer any *one* of the following :

15 Chemical composition of mitochondria.

16 Types of receptor desensitization.

(1 × 3 = 3 weightage)

VI. Answer any *one* of the following :

17 Explain the molecular organization of cell membrane. Add a note on membrane domains.

18 Describe the structural changes in chromosomes. Add a note on interrupted genes.

(1 × 5 = 5 weightage)

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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.

(1 × 2 = 2 weightage)

V. Answer any *one* of the following :

15. Regression analysis.
16. t-test.

(1 × 3 = 3 weightage)

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.

(1 × 5 = 5 weightage)

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EXAMINATION, NOVEMBER 2022**

Zoology

ZOL 1C 03—ECOLOGY AND ETHOLOGY

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

Part A (Ecology)

I. Answer any *three* of the following :

1. Connectance and linkage.
2. Mutualistic cheating.
3. r-selection.
4. Project tiger programme.
5. Carbon credit.

(3 × 2 = 6 weightage)

II. Answer any *three* of the following :

6. Dispersive mutualism.
7. Life tables and survivorship curve.
8. Nitrogen cycle.
9. Competitive Exclusion Principle.
10. Savanna biome.

(3 × 3 = 9 weightage)

III. Answer any *one* of the following :

11. Briefly explain ecological succession and its significance.
12. Discuss on the characteristics of a biotic community. Add a note on edges and ecotones.

(1 × 5 = 5 weightage)

Turn over