

Zoology (Hons.) Part-2 Paper III

Group A: Cell Biology

1. Concept of Prokaryotic and Eukaryotic cells.
2. Plasma membrane: Molecular organization.
Transport of substances across membrane.
3. Ultra structure and function of mitochondria, Golgi body, Ribosomes and Chromosomes.
4. Cytoskeleton.
5. Cell Division: Mitosis and Meiosis.
6. Microtubules.
7. Microfilaments.
8. Stem Cells
9. Senescence.
10. Microbodies.

Group B: Genetics

1. Laws of heredity.
2. Linkage and Crossing over.
3. Chromosome mapping.
4. Interaction of Genes.
5. Multiple alleles.
6. Sex determination.
7. Sex –linked Inheritance.
8. Non-chromosomal Inheritance.
9. Chromosomal aberrations.
10. Gene mutation.

Zoology (Hons.) Paper- IV

Group A: Reproductive Biology

1. Structure and function of mammalian ovary.
2. Reproductive cycle in vertebrates.
3. Parturition and its regulation.
4. Structure of mammary gland and Hormonal control of lactation.
5. Structure and function of mammalian testis.
6. In-vitro fertilization & Embryo transfer.
7. Biochemistry of semen.
8. Amniocentesis.
9. Twins

Group B: Biometry

1. Introduction to Biostatistics.
2. Mean, Median and Mode.
3. Standard deviation and Standard Error.
4. Analysis of variance.
5. Probability distribution and their Properties.
6. Chi-square test and Student's 't' test.
7. Correlation.
8. Regression.

Zoology (Hons.) Part II practical

- I. Dissection- Cartilaginous or bony fishes, Afferent and Efferent Blood vessels, Cranial nerves, Internal ears of bony fish
- II. Mounting of the material provided
- III. Spotting-Bones-2, Museum specimen-1, slide-Histology -2, Embryology -2
- IV. Biometry- Mean, Median, Mode, Standard Deviation, standard error
- V. Class record & field Work
- VI. Viva-voce

Zoology Part – II (Sub /Gen)

In all 08 Questions are to be set, four from each group. Five questions are to be answered, selecting at least two from each group.

Group A: Cell Biology and biochemistry

- i. The cell-Ultra Structure of cell.
- ii. Ultra structure of Ribosome, Golgi body& Mitochondria.
- iii. Ultra Structure of Chromosome.
- iv. Cell cycle.
- v. Cancer.
- vi. Immunity.

- vii. Water as biological solvent.
- viii. Carbohydrate- Structure & Classification.
- ix. Protein –Structure and classification.
- x. Vitamins.

Group B: Physiology, Endocrinology, and Developmental Biology

- I. Respiratory pigments
- II. Circulation-Blood composition, and coagulation
- III. Digestion and absorption.
- IV. Structure and function of Pituitary, Thyroid, Adrenal, Islet of Langerhans in mammals
- V. Gametogenesis- Spermatogenesis and Oogenesis
- VI. Fertilization
- VII. Types of eggs
- VIII. Gastrulation in Chick
- IX. Extra embryonic membranes in Chick

Practical-Part II (sub/gen)

- i. Estimation of haemoglobin
- ii. Glucose detection by Benedict's reagent
- iii. Spotting
 - a. Histological slides-2
 - b. Embryological slides-2
 - c. Cytological slides -3

- iv. Class records
- v. Viva -voce