

Semester IV

PAPER 5 Animal Physiology and Biochemistry (MCQ)

General physiology (in outline) with special reference to mammals

Unit-I

- Physiology of digestion
- Respiration
- Blood and circulation (blood coagulation, transport of O₂ and CO₂)

Unit-II

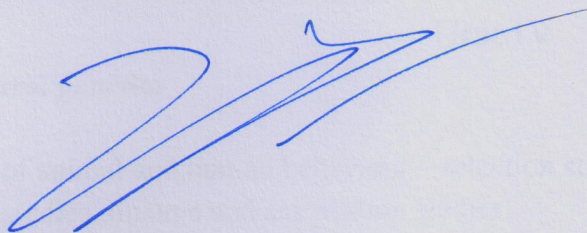
- Physiology of excretion and osmoregulation
- *Nervous and Muscular system* Thermoregulation

Unit-III

- Classification of carbohydrates, lipids and proteins
- Classification of enzymes: Michaelis-Menten kinetics,

Unit-IV

- Cellular Biochemistry: Glycolysis, Krebs cycle, Electron Transport Chain (ETC)
- Metabolism: Gluconeogenesis, Glycogenolysis, Glucogenesis



PAPER 6 Developmental Genetics, Population Genetics & Behavioural Genetics (MCQ)

Unit-I

Developmental Genetics

- Molecular basis of development
- Developmental genes
- Genetic determination of sex in *Caenorhabditis elegans*, *Drosophila melanogaster* and mammals

Unit II

Population and evolutionary genetics

- Microevolution in Mendelian population: Hardy-Weinberg equilibrium
- Allele and genotype frequencies
- Evolutionary forces: mutation, migration, natural selection, genetic drift

Unit III

Quantitative genetics

- Genotype and phenotype relation: effect of environment, penetrance, expressivity, phenocopy, gene interactions and modifying genes
- Inheritance of quantitative traits—continuous and discontinuous variation
- Polygenic inheritance, genetic variance, heritability

Unit IV

Behavioural genetics

- Genetics of animal and human behaviour—selection studies, inbred strain studies, twin and adoption studies, linkage and association studies
- Learning and memory
- Psychological disorders---mental retardation, learning disorders, mood disorders, anxiety disorders, personality disorders

