Syllabus for URET Examination 2017
Department of Zoology
Total Marks 200

Paper-I

Marks-100

- Theoretical frequency distribution and test of Significance
- Probability distribution
- Correlation and regression
- ANOVA
- Microscopy (Phase, Fluorescent and Electron)
- Centrifugation technique for separation of Biological samples
- Spectroscopy
- Electrophoresis
- Partition Chromatography technique (Paper, TLC)
- Adsorption chromatography (Gel, Ion-exchange)
- Immunological techniques (RIA, ELISA)
- HPLC and Gas-liquid Chromatography
- Gel Documentation
- PCR: Principles and Application
- Blotting (Southern and Northern)
- FISH and GISH

Paper-II

Marks-100

- Origin of Metazoa
- Structure and affinities of Peripatus
- Torsion & detorsion in Gastropoda
- Larval forms in Echinodermata
- Host-parasite interactions
- Structure & retrogressive metamorphosis in Herdmania
- Structure, distribution and affinity of Dipnoi
- Origin and evolution of amphibian
- Origin and evolution of aortic arches, heart and kidney
- Molecular organization of Plasma Membrane
- Structure and function of Golgi Complex and Endoplasmic reticulum
- Signal transduction pathways, second messenger system- cyclic AMP, DAG, IP3

- Cell adhesion molecules, Gap Junction and Connexins.
- Active and Passive transportation-Gases and uncharged polar molecules and water
- Protein targeting- Mitochondrial outer and inner membrane.
- Human cytogenetics- Techniques in human chromosome analysis
- Genetic pathways to cancer, models for familial cancer (Colo-rectal cancer and breast cancer)
- Ribozymes, Application of ribozyme technology
- DNA damage and repair ,Gene silencing
- Mendel's law of Inheritance
- Sex determination
- Nature, size & Structure of bacteriophages and animal viruses
- Microbial genetics - Transformation and Transduction
- Molecular taxonomy
- Nanotechnology in drug delivery and Biosensors
- Structure of nucleic acids- Components of DNA and RNA forms of DNA and types of RNA.
- Mechanism of gene-regulation in prokaryotes
- Structure, chemistry and function of Endocrine glands- Pituitary, parathyroid and thyroid
- Neuro secretions, inter-relation between endocrine system and nervous system
- Stem cells and its applications
- Multiple ovulation, Invitro fertilization and Embryo transfer technique
- Gene cloning, restriction enzymes, cloning vectors, gene libraries and their screening
- Genetic engineering and its application in environmental clean up, medicine, industry and agriculture
- Scanning and Transmission Electron Microscope
- Partition chromatography- Paper, Gas chromatography
- Physiological and biochemical basis of memory
- Pollution and abatement of land, air and water, noise pollution
- Amino acids and peptides, 3-D structure of protein, Ramachandran plot, α-helix, β-pleated sheet
- Enzyme kinetics, Mitchelis constant, Line-Weaver burkes, Eddi-Hoftsee
- Biochemistry of inherited and metabolic disorders - Phenylketoneuria, Alkaptonuria, Albinism
- Electromagnetic radiation and its interaction with living matter with reference to UV and Visible light
- Hypersensitivity- Immediate and delayed types.
- Molecular structure of immunoglobulin.
- Multigene Organization of Light chain
- Generation of Antibody Diversity
- Antibody Engineering
- Immunocytochemistry

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Chairman Board of Studies
Zoology