

SARVAJANIK UNIVERSITY, SURAT
SYLLABUS FOR Ph.D. ENTRANCE TEST (PET) IN ZOOLOGY

Unit 1. Animal Taxonomy and Systematics with study of nomenclature

Significance, Nomenclature, Modern Classification of Animal Kingdom

Unit 2. Fundamentals of Invertebrates & Vertebrates

Major characteristics of Invertebrates & Vertebrates, Comparison between non-chordates & chordates, Ancestry & phylogeny of Invertebrates & vertebrates

Unit 3. Diversity of Chordates: Lower vertebrates and Higher vertebrates

General Characters & Classification (till suborder) of Phyla Protozoa till Mammals with examples.

Unit 4. Cell biology, Molecular Biology and Genetics

Cell & its structure, Cell organelles – structure & function, Cell division, Cell cycle, Chromosomes & its types, Mendelian Genetics, Chromosomal Mutations, Chemical nature of Genetic material, Replication of DNA, Protein Synthesis, Immunology, Gene Mutation

Unit 5. Animal Physiology and Biochemistry

Animal Tissue System, Life Processes, Endocrinology, protein metabolism, carbohydrate metabolism

Unit 6. Animal Behavior (Ethology)

Types of Behavior, Biological Clock, Types of Animal Adaptations

Unit 7. Developmental Biology (Embryology)

Modes of Reproduction, Gametogenesis, Fertilization, Cleavage, Blastula, Gastrula, Regeneration, Organogenesis, Parthenogenesis

Unit 8. Wildlife Biology and Zoogeography

National Parks & Sanctuaries, Wild Life of India, Zoogeographical Regions, Modes of Wild Life Conservation

Unit 9. Applied/ Economic Zoology

Apiculture, Sericulture, Aquaculture, Poultry Farming

Unit 10. Tools and Techniques used in Biological sciences

Microscopy, Microtomy, Cell Culture, Chromatography, Electrophoresis

References

- Invertebrate Zoology by E L Jordan & Dr. P S Verma , S Chand pub.,
- Modern Textbook of Zoology Invertebrates by RL Kotpal, Rastogi publications, 4th Edition
- Chordate Zoology by E L Jordan & Dr. P S Verma, S Chand pub.

- Modern Textbook of Zoology Vertebrates by R L Kotpal, Rastogi publications, 4th Edition
- Cell Biology, Genetics, Molecular Biology, Evolution & Ecology by P S Verma & V K Agarwal, S. Chand Pub.
- Animal Behaviour by Dr V. K Agarwal, S Chand Pub.
- Animal Behaviour by M.P. Arora, Himalayan Pub.
- Chordate Embryology Developmental Biology by P S Verma & V K Agarwal, S. Chan Pub.
- Principles of Anatomy & Physiology by Gerard J Tortora & Bryan H Derrickson, Wiley Pub.
- Text Book of Medical Physiology by Guyton & Hall, Elsevier
- Developmental Biology by Scott F Gilbert, Sinauer Associates Inc.
- An Introduction to embryology by B. I Balinsky, Cengage Learning India