**Paper I: Recent Advances in Zoology Maximum Marks: 100**

**Time allowed: 3 hours Min. Pass Marks: 50**

Unit I: Advanced Trends in Applied Zoology

1.1 Latest techniques in Fish cultures & its products

1.2 Parastoides & predators as biocontrol agents of insect pests

1.3 Conservation of Biodiversity; *in-situ*, *ex-situ* and gene bank

1.4 Recent advancements in the diagnosis and control of parasitic diseases (Protozoan and Helminths)

Unit II: Nanotechnology and Recombinant DNA Technology

2.1 Introduction to Nanotechnology & its Applications in animal science, Therapy Techniques, Diagnostic Techniques

2.2 Biosensors in detection of emerging diseases (Cancers, infections etc.)

 2.3 Principles of Hybridoma technology

2.4 Production of monoclonal antibodies and biomolecules hormones through rDNA technology

Unit III: Recent Techniques in Zoology

3.1 DNA fingerprinting and its applications

3.2 Ames test

3.3 PCR and its applications

3.4 G-protein coupled receptors

Unit IV: Latest Advances in Immunology

4.1 Hypersensitivity: Mechanism & types of Reactions

4.2 Autoimmune diseases: Causes and control

4.3 Tumour Immunology: Host immune response to tumours & tumour escape mechanisms

4.4 Tumour immune therapy: Non-Specific and antigen Specific treatment