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DEPARTMENT OF ZOOLOGY
Patna University,
Pre Ph.D. Course Work,
(To be completed in the Department during Ph.D.)
PAPER – II

Group A : Compulsory

Unit- I. Laboratory Practices.

- (a) Good laboratory practices: Principles and working, safety of biological and radio hazards and related precautions, disposal of biological and chemical wastes.
- (b) Accuracy of liquid transfer.
- (c) Preparation of reagents, buffers, various fixatives and stains.
- (d) Operation and maintenance of instruments and equipments.

Unit- II. Experimentation on animals.

- (a) Laboratory Management of Animals: Handling and Ethics.
- (b) Guidelines and implementation of control and supervision of experiments on Animals (CPCSEA) for the management of laboratory animals.
- (c) Ethical consideration in research on human beings.

Unit - III. Molecular biology technique

- (a) Electrophoretic Techniques for characterization of biomolecules (DNA, RNA, Protein & Enzyme)
- (b) DNA Micro array, DNA sequencing & molecular phylogeny.
- (c) Flow cytometry FISH, ELISA, Immuno fluorescence.
- (d) Northern, Western & Southern blot technique.
- (e) PCR, RFLP, RAPD, AFLP

Unit - IV. Microscopy and Analytical instruments.

- a) Bright field, fluorescence, confocal laser microscopy
- b) SEM and TEM.

Unit -V. Analytical Technique & Instruments

- a) Colorimetry, Spectrophotometry, ELISA
- b) Turbidity meter, Preparative centrifugation.

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