

Syllabus for Integrated PhD (2015-2016)

Paper II

Research Methodology (Ichthyology)

Max. Marks: 100

Time allowed: 3 hours

Unit I. Fish Biology

- 1.1. Fish morphometric analysis technique
- 1.2. Methods used for determination of age and fecundity in fishes
- 1.3. Induced breeding techniques in fishes
- 1.4. Method used for the analysis of feeding behaviour of fish

Unit II. Techniques in Aquatic biology

- 2.1. Methods used for estimation of Dissolved oxygen, Free CO₂, Transparency, Total alkalinity and pH of water
- 2.2. Technique used for the analysis of nitrate, nitrite and phosphorous in water bodies
- 2.3. Collection, preservation and estimation of zooplanktons in water bodies
- 2.4. Live feed culture techniques of Algae, Daphnia and Artemia and their bio-enrichment

Unit III. Fish Biochemistry and Histology

- 3.1. Preparation of different buffer and saline solutions
- 3.2. Methods used in determining the moisture, protein, fat and ash contents in fishes
- 3.3. Methods used for determination of various blood parameters (Hb, RBC, PCV and WBC) in fishes
- 3.4. Microtomy technique in fishes

Unit IV: Statistics and preparation of manuscript

- 4.1. a) Sampling methods for collecting data, processing and analysis of data
b) Manuscript writing and presentation of data
- 4.2. Correlation and regression analysis
- 4.3. Tests of significance (t-test and chi-square test)
- 4.4. Multivariate analysis, non-parametric tests (Mannwhiteny U test) and one way analysis of variance (ANOVA)