

M.SC. (FINAL) ZOOLOGY - 2006-07

ELECTIVE PAPER GROUP - II (Organismic Biology stream)

AQUACULTURE, FISHERIES, ECOTOXICOLOGY, LIMNOLOGY AND ICHTHYOLOGY

PRACTICAL-II

Duration : 5 hours

M.M. 100

<u>S.No.</u>	<u>Exercise</u>	<u>Regular</u>
1	Fish Identification (3 fishes)	15
2	Major exercise	14
3	Minor exercise (two) 10+10	20
4	Spots (08)	16
5	Field Record	25
6	Viva-voce	10
	Total :-	100

Exercises :

- 1 Identification of fishes upto species level with the help of books and writing notes on fisheries habitat etc.
- 2 Take out pituitary gland of a major carp fish.

- 4 Ova diameter measurement in the given sample of ovary.
- 5 Identification of fingerlings of major carp fishes.
- 6 Estimate dissolved oxygen content in given water sample by Winkler method.
- 7 Estimate gross primary productivity of water by dark and light bottle method.
- 8 Determine B.O.D. of the given lake water/waste water.
- 9 Estimation of total alkalinity in a water sample.
- 10 Estimation of chlorides in a given water sample.
- 11 Estimation of nitrates in water sample by spectrophotometer.
- 12 Estimation of phosphates in water sample using spectrophotometer.
- 13 Qualitative analysis of given plankton sample.
- 14 Measurement of the area of the lake and its shore line from the given map and calculation of the shoreline development index.
- 15 Bioassays - calculation of LC-50.
- 16 Haematological parameters-different counts identification of histopathological measurement

- 17 Gut content analysis of any carp fish.
- 18 Report on freshwater weeds of a lake.
- 19 Visits to various lakes, fish farms, landing centres and polluted streams for limnological and fisheries study, preparation of field report.
- 20 Identification and writing comments on commercially important indigenous fishes, exotic fishes, freshwater weeds, insects, nets, boat models, hapas, limnological instruments and slides of dominant plankters.

REFERENCE BOOKS (LATEST EDITIONS) :

- 1 Bal, D.V. and Rao, K.V.: Marine Fisheries, Tata McGraw Hill, New Delhi.
- 2 Jhingran V.G. Fish and Fisheries of India. Hindustan Publishing Corporation, New Delhi.
- 3 Kapoor B.G. and Khanna, B : Ichthyology Hand Book. Springer, New Delhi.
- 4 Saksena, D.N.: Ichthyology - Recent Research Advances Oxford and IBH, New Delhi.
- 5 Moyle : Fishes : An Introduction to Ichthyology, Continental Book Company, Delhi.
- 6 Goldman : Limnology, Continental Book Company, Delhi.
- 7 Kurian : Prawns and Prawn Fisheries of India continental Book Company Delhi.

- 8 Edmondson, W.T. : Freshwater Biology Scientific Book Suppliers Delhi.
- 9 Beavan : Hand Book of Freshwater Fishes of India. Scientific Book Suppliers, Delhi.
- 10 Nelson, J.S.: Fishes of the World Panima Book Distributors. New Delhi.
- 11 Day, F. The Fishes of India.
- 12 Munro, I : The marine and Freshwater Fishes of Cylone.
- 13 Wetzel : Limnology, Saunders College Publishing House, USA
- 14 Welch : Limnology, McGraw Hill Book Co. New York
- 15 Bond - Biology of Fishes.
- 16 Rath : Fish and Fisheries of India.
- 17 P.K.Gupta, D.K.Salunkhe: Modern Toxicology
- 18 Mc Cutcheon RS, Toxicology. The Basic Science of Poisons.