

ALAGAPPA UNIVERSITY, KARAIKUDI-630003
SCHOOL OF MARINE SCIENCES

DEPARTMENT OF FISHERIES SCIENCE

FISHERIES SCIENCE

PH.D. ENTRANCE EXAMINATION SYLLABUS

Unit-I

Biology of Finfish and Shellfishes: Principles of Taxonomy, Taxonomic classification of commercially important finfish and shellfishes. Biology of commercially important finfish and shellfishes: Digestive system, Respiratory system, Physiological system, Nervous system, Reproductive system, food and feeding habits, age & growth, life cycle, role of endocrine system in reproduction. Migration of fishes. Finfish and shellfish immunology. Infectious and Non-infectious Diseases. Techniques in identification of diseases.

Unit-II

Aquaculture: Shellfish and Finfish Hatchery Management, nursery site selection, design and equipment for small, medium and large scale production. Aquaculture systems: Extensive, semi-intensive and intensive culture of fish, Pen and cage culture in lentic and lotic water bodies, polyculture, composite fish culture-species selection, culture practices, harvesting and Integrated fish farming. Coastal Aquaculture and Mariculture. Biosecurity procedure for fish farming. Ornamental fish production. Nutritional bioenergetics, Finfish and shrimp feed processing

Unit-III

Fishery Resources and management: Global and Indian scenario of inland, coastal and marine fisheries. Resource potentials - problems and management of the fisheries resources. Principal method of exploitation of fishes. Traditional and modern fishing crafts and gears of India: Construction materials, types, principle and operations. Regulations for craft and gears. Remote Sensing and GIS in Fisheries Management. Marine fisheries and aquaculture legislations, Water policies, Deep sea fishing regulations.

Unit-IV

Fish Processing Technology: Biochemistry of fish. Types of fish spoilage, causative factors. Post-harvest management for finfish and shellfishes: Grading, quality evaluation, packing, storage and transportation. Processing method of preservation of fishes: Chilling, Freezing, canning, smoking, irradiation. Biochemical changes during processing. Packing: materials sources - types - packing. Quality assurance in Post-harvest and packing. Fishery By-products, Value added products.

Unit-V

Aquatic Ecology, Biodiversity and Conservation: Aquatic ecosystem - components - structure and functions; factors influencing life in the oceans. Ecological concepts, biogeochemical cycles & Aquatic pollution. Biodiversity - factors influencing aquatic biodiversity, types of biodiversity. Natural resources and their conservation, Bioinvasion.

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