

Fisheries

1. Classification of class Teleostomi up to major families of the following orders represented in Nepal

- 1.1 Anguilliformes
- 1.2 Beloniformes
- 1.3 Clupeiformes
- 1.4 Cypriniformes and Cyprinodontiformes
- 1.5 Osteoglossiformes
- 1.6 Perciformes
- 1.7 Salmoniformes
- 1.8 Siluriformes
- 1.9 Synbranchiformes and Tetraodontiformes

2. Structure and functions of different organ-systems including sense receptors and endocrine glands of fish

- 2.1 Integumentary system
- 2.2 Skeletal system
- 2.3 Digestive system
- 2.4 Respiratory system
- 2.5 Blood vascular system
- 2.6 Excretory system
- 2.7 Reproductive system
- 2.8 Nervous system
- 2.9 Endocrine systems

3. Aquaculture

- 3.1 Different types of aquaculture systems
- 3.2 Cultivable species- finfish and shellfish for freshwater aquaculture
- 3.3 Carp culture
- 3.4 Culture of air breathing fishes
- 3.5 Culture of Exotic fish species
- 3.6 Culture of cold water fish
- 3.7 Special systems of aquaculture
- 3.8 Culture of freshwater prawn
- 3.9 Culture of Fresh water Mussel and frog

4. Population, Productivity & Conservation

- 4.1 Population growth
- 4.2 Productivity
- 4.3 Conservation policy and programmes for endangered species

5. Design and construction of farm and Hatchery Structures

- 5.1 Soil – Types, Properties, Classification
- 5.2 Types of farms- Layout and design of farms
- 5.3 Design and construction of Ponds and Dykes
- 5.4 Design and construction of Hatcheries

6. Water Quality

- 6.1 Temperature and Turbidity
- 6.2 pH, Dissolved Oxygen, CO₂, Alkalinity, Ammonia, Orthophosphate, Chlorophyll-a

7. Principles of fish genetics and breeding

- 7.1 Sex determination, Sex linked genes Qualitative and quantitative traits
- 7.2 Environmental effect on gene expression

8. Breeding techniques of fish

- 8.1 Management and transportation of brood fish
- 8.2 Induced breeding of carps, cat fishes and perch
- 8.3 Fish seed rearing and transportation techniques

9. Fish diseases: Life Cycle and control measures of different pathogens of fishes

- 9.1 Protozoa
- 9.2 Worms
- 9.3 Crustaceans
- 9.4 Mycotic diseases and EUS
- 9.5 Bacterial diseases
- 9.6 Diseases of miscellaneous origin
- 9.7 Pathogen free stocking materials and Trans-boundary movement of aquatic animal
- 9.8 Defense mechanisms in fish
- 9.9 Different methods of disease control in fishes

10. Fish Microbiology

- 10.1 Normal microflora of fish pond
- 10.2 Common microflora of fish
- 10.3 Microbial growth, physical condition required for growth

11. Fish nutrition and feed technology

- 11.1 Basic principles of feeding
- 11.2 Nutritional requirements of cultivable fish and shellfish
- 11.3 Feed formulation and manufacturing
- 11.4 Forms of feed, feed additives and feed storage