

**SCHEME AND SYLLABUS FOR THE RECRUITMENT TO THE POST OF  
FISHERIES DEVELOPMENT OFFICER**

<b><u>PART-A:</u></b> WRITTEN (OBJECTIVE TYPE) EXAMINATION				
PAPER-1	GENERAL STUDIES	150 Marks	150 Minutes	150 Questions
PAPER-2	SUBJECT	300 Marks	150 Minutes	150 Questions
<b><u>PART-B:</u></b>	INTERVIEW	50 Marks		

**SYLLABUS**

**PAPER-1.**

**GENERAL STUDIES:**

General Science

Current Events of National and International Importance.

History of India and Indian National Movement. India and World Geography.

General Mental Ability.

Questions on General Science will cover General appreciation and understanding of science including matters of every day observation and experience, as may be expected of a well educated person who has not made a special study of any particular scientific discipline. In current events, knowledge of significant national and international events will be tested. In History of India, emphasis will be on broad general understanding of the subject in its social, economic and political aspects. Questions on Indian National Movement will relate to the nature and character of the nineteenth century resurgence, growth of Nationalism and attainment of independence. In geography emphasis will be on geography of India. Questions on geography of India will relate to physical, social and economic geography of the country, including the main features of the Indian agricultural and natural resources. On general mental ability, the candidates will be tested on reasoning and analytical abilities.

**PAPER-2.**

**SUBJECT:**

**Section-A (Non-chordata and Chordata)**

**1. Non-Chordata:**

Concept of Binomial nomenclature specie and genus

Phylum Protozoa: Parasitic amoebae, Plasmodium, Trypanosoma, Paramecium

Phylum Porifera: The systematic position of sponges canal system, skeleton

Phylum Coelenterata: Concept of polyp and medusa, phenomenon of polymorphism (siphonophora) corals and coral formation. Ctenophores and their systematic position.

Phylum Platyhelminthes: Fasciola, Taenia parasitic adaptation in trematodes and cestodes, trematodes and parasites on fishes.

Phylum Nematelminthes: Ascaris, Strongyloides, Wuchereria, Dracunculus.

Phylum Annelida: General characters, classification with examples, Vermi culture, compost.

Nephridial system in Annelids: Reproduction in Annelida, worm culture and compost

Phylum Arthropoda: Mouth parts of mosquito, House fly, Appendages of Prawn, shell fishes and source of food, insects and their economic importance.

Peripatus its structure: general organization and systematic position.

Phylum Mollusca: Unio (fresh water mussel), Shell fishes as source of food/pearl culture.

Phylum Echinodermata: Echinoderm larvae; water vascular system, Evolutionary significance of echinoderm larvae.

Phylum Hemichordata: Systematic position of Hemichordates.

**2. Chordata:**

Urochordata: Herdmania, Retrogressive metamorphosis

Cephalochordata: Amphioxus – general character and affinities only

Class pisces: General characters of chondrichthyes and osteichthyes; distinctive features of crossopterygi

Latimaria (coelcanth fish) Lugh fishes dipnofishes and their importance to mankind. A survey on edible fishes in A.P.

Class Amphibia: General characters of Anura, Urodela and Apoda

Class Reptilla: The outline classification of Reptiles with general characters of chelonia; squamata, crocodilla, Dinosaurs. Poisonous and non-poisonous snakes of India.

Class Aves: Adaptations of flight.

Class Mammalia: General characters and distribution of Prototheria; Mataheria and eutheria.

Distribution of Maruspials: Adaptive radiation in marsupials, Aquatic mammals, their influence on Fish in the Sea.

Embryology: Gametogenesis and fertilization, the development of Amphioxus frog, chick and Rabbit, Fate maps, inductors and inducing mechanism.

### **3. General Biology: Generics; Cytology and Ecology:**

General Biology:

- a) General aspects of endocrine glands, Hormone action
- b) Evolution: Origin of life; Theories of evidence of Organic Evolution speciation and hardy Weinberg law.
- c) Palaeontology: Elephant
- d) Zoogeography: The zoogeographical realms and the fauna of various Zoogeo-graphical regions and discontinuous distribution.

Genetics:

Heredity; Mendelism, Linkage, Sex linkage over, Recombinant DNA technology, transgenic animals and its effect on fisheries.

Cytology:

Ultra structure of a cell and cell Organeles with their structure and functions. The structure of chromosome. Prokaryotic and Eukaryotic cells. Nucleic acids DNA, RNA. Protein synthesis.

Ecology:

Flow of energy through ecosystem, the concept of ecology and ecosystems (Aquatic and terrestria) Ecological pyramids; web of life organismal physiology; Biomass production

1. Physilogy of digestion
2. Physilogy of Muscle contraction
3. Physilogy of Excretion and Osmo-regulation
4. Cell Metabolism: Glycolysis, Tri corbolic acid (TCA) cycle, Beta oxidation.

### **Section-B: Mari Culture and Aquaculture.**

#### **1. MARI-CULTURE:**

Introduction:

Physico-chemical parameters of sea water and its effects on fishery wealth.

Terminology associated with marine fisheries.

Plankton – (Micro, Macro Nano), etc., and Biomass.

Condition of Sea: Effect of Currents and current system in the sea on fishery wealth in sea.

Marine fishes: Important food fishes (including prawns and shrimps) of Andhra Pradesh.

Commercially important Marine fisheries of India and Andhra Pradesh.

Identification of different species, classification, Identification of different species.

Commercial importance of marine organisms.

Migration of fishes in sea, Effect of fishing, Closed season, ban on fishing, seal ranching.

Harbours, Navigation, Gear and Crafts: Fishing harbours, maintenance of hygiene in harbours and landing centers, use of VHF sets.

Crew Life saving and Fire fighting equipment.

First aid Precautions for emergencies and Engines

Marine electronic and Navigational equipments.

Weather prospects-Storm signals, Rules of Navigation.

Fishing Gears and Crafts used in the marine, brackish and inland waters

Types of trawling-actual operations.

#### **2. AQUACULTURE:**

Fish culture: Use of Fisheries in different sectors like Food, Income, Commerce, Recreation, Health and Mental capabilities.

Different types of water resources available and their utilization.

Fish culture practices in India – capture and culture fisheries.

Survey: Methodologies to be adopted for survey in all water sources.  
Collection of samples, preservation.  
Usage of survey equipments for determination of Physico-chemical of soil and water.  
Collection of Plankton – identification of fresh water fishes and prawn, brackish water fish and shrimp.  
Aquatic insects and aquatic plants.  
Methods of estimation of different Physico-Chemical parameters of water and soil.  
Hydro-biological investigations to determine the suitability of the water.  
Primary production – Food chain – estimation of productivity in different water sources.  
Suitable Species for Aquaculture:  
Identification and classification of important species cultured – Carps – (Indigenous and exotic), Fresh water prawns.  
Species selected for B.W. Aqua culture – Identification and classification of important species cultured.  
Induced breeding: Identification and protection of natural fish/prawn breeding grounds.  
Different types of Bundh breeding.  
Design and construction of fish seed farm,  
Induced breeding – Selection of breeders – Hypophysation technique – Cross breeding.  
Types of hatcheries, techniques and practices involved production, rearing of spawn and fry to fingerlings.  
Fish, prawn and shrimp seed transport.  
Induced Maturation.  
Different types of jars used in hatcheries and their uses.  
Rearing of larvae – Larval rearing tanks – larval feeding – live feeds – artificial feeds.  
Pond Management:  
Design of Brackish water shrimp farms and construction.  
Pond preparation – manuring – use of probiotics.  
Precautions during harvesting.  
Fish/shrimp/prawn health management:  
Types of Parasites – Diseases and mortality – Viral and bacterial diseases of fish and shrimp.  
White Spot syndrome disease, Prevention and treatment – effects of usage of antibiotics  
Role of Fisheries:  
Role of fisheries in marketing.  
Marketing Information System. Training and extension.  
Fish preservation, principles of preservation, pickling – other preservation methods.  
Value added products packing for exports – Fishery Bye Products.  
Public Health fishes like Gambusia and larvivorous fishes.  
Commercial application for tourist attraction and ornamental fish.  
Types of ornamental fishes and plants. Vision 2020 etc.