

**SCHEME AND SYLLABUS OF EXAMINATION FOR THE PURPOSE OF FILLING THE
POST OF FISHERIES GUARD UNDER SIKKIM STATE SUB-ORDINATE FISHERIES**

SERVICE:

The competitive examination shall comprise of two stages: 1. Physical Endurance Test, and
2. Main (written) Examination.

Stage 1: Physical Endurance Test (PET):

1. All candidates have to appear in the Physical Endurance Test.
2. The candidates should possess the following physical standards:
 - i. Height: 155cm
 - ii. Chest girth: 84cm
 - iii. Chest expansion: 90cm
(Note: Physical fitness to be certified by the Medical Board)
 - iv. Should be able to walk a distance of 25 Kms within 4 hrs.
3. The Sikkim Public Service Commission shall draw a merit list of those candidates who have qualified the PET to call for appearing in the main written examination.

Stage 2: Main (written Examination):

The mode of examination and setting up of questionpapers shall be both objective MCQs and Conventional types. The candidates are required to answer the objective type MCQs in the OMR Sheets and are required to follow the guidelines provided in the OMR Sheet while answering the questions.

The main examination shall consist of 2 papers:-

PAPERS	SUBJECT	FULL MARKS	TIME ALLOWED
PAPER-I	General English	50	1:00 hours
	General Knowledge	30	
PAPER-II	Zoology	100	2:00 hours

4. SYLLABUS

PAPER-I:

GENERAL ENGLISH

The question will be designed to test the candidate's understanding and command of the English language. The patterns of questions would be broadly as follows:-


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- 1) Comprehension of given passage.
- 2) Grammar.
- 3) Usages and Vocabulary.
- 4) Report Writing, Essay Writing and Precis Writing

General knowledge: Knowledge of current events of local, National and International importance.

PAPER-II: ZOOLOGY

- 1) Salient features and classification of Chordates (Amphibia and Reptillia up to orders) Pisces and Aves up to subclasses.
- 2) Introduction of Geological Time Scale. Origin of life. Fossils and their significance.
- 3) Theories of evolution: Darwinism, Neo- Darwinism, Lamarckism and Neo-Lamarckism.
- 4) Cytology : Prokaryotic and eukaryotic cells. Ultrastructure and functions of plasma membrane, Golgi complex, Mitochondria, Endoplasmic reticulum, Ribosome, Lysosomes, Cell cycle. DNA structure, mechanism of DNA replication, transcription and translation in prokaryotes. RNA types, RNA structure: Clover leaf model.
- 5) Genetics: Mendelian Genetics: Experiments and principles of inheritance; Concept of genotype, phenotype, dominance, recessive, Co-dominance ,Incomplete dominance; Back cross and test cross. Gene interactions; Complementary, Epistasis, supplementary, Pleiotropic and lethal genes. Chromosomal theory of inheritance; Multiple alleles (ABO blood group in man)
- 6) Immunology, Developmental Biology and Endocrinology: Immunity: Innate and adaptive. Cellular components: T, B, NK cells and macrophages. Antigen and antibody structure and types. Fertilization , gastrulation, Structure and functions of Pituitary, Thyroid and Adrenal gland .
- 7) Biochemistry: Classification of carbohydrates, proteins and lipids, Metabolism of lipids and amino acids.
- 8) Ecology and Environmental Biology : Introduction to Ecology. Concept of ecosystem and ecological niche. Food chain, food web, ecological pyramids and energy flow. Ecological succession: Definition, Process and types, Introduction to animal ethics.
- 9) Functional Biology of Animals: Pisces: Respiratory System & Accessory respiratory organs.
- 10) Zoogeography and Biodiversity Conservation: Conservation and management of endangered wildlife in India. Concept of sanctuaries and National parks. Indian Wildlife Protection Act and its schedules. Introduction to IUCN and threat categories. Introduction to Biodiversity and human welfare, Biodiversity Hotspots with special reference to India. Introduction to Mega- diversity.
- 11) Population Genetics and Evolution: Population Genetics, Gene pool, Gene frequency, Genetic drift, Gene flow, Polymorphism, Natural selection. Hardy-Weinberg principle .

- 12) Toxicology: Definition of toxicity, classification of toxicants. Xenobiotic and Xenotoxicology concept. Toxic agents and mode of action: Pesticides, metals and radiation. LC_{50} , LD_{50} , acute and chronic toxicity. Environmental Impact Assessment (EIA) and Environmental Management Programme (EMP).
- 13) Economic Zoology: Prawn culture, Apiculture. Integrated Pest Management. Pisciculture: Basic concept of Mono and Composite fish culture, Induced breeding in fishes. Fish Diseases (Bacterial, Fungal, Viral and protozoan): symptoms and control. Basic concept of Integrated Fish Farming. Identification of some indigenous fishes of Sikkim (*Schizothorax* sp., *Neolissochilus hexagonolepis*, *Garra* sp, *Pseudocheneis sulcatus*). Identification of some culturable fishes in hilly states like Sikkim (*Ctenopharyngodon idella*, *Cyprinus carpio*, *Oncorhynchus mykiss*, *Labeo rohita*, *Cirrhinus cirrhosus*, *Catla catla*).



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