

नेपाल सरकार
गृह मन्त्रालय
प्रहरी प्रधान कार्यालय
(मानवश्रोत एवं प्रशासन विभाग, भर्ना तथा छनौट महाशाखा)
नक्साल, काठमाण्डौ ।

प्राबिधिक प्रहरी निरीक्षक (विधिविज्ञान समूह, **Biology उप-समूह**) को खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम ।

पाठ्यक्रमको रूपरेखा:- यस पाठ्यक्रमको आधारमा निम्नानुसार दुई चरणमा परीक्षा लिईने छ :-

प्रथम चरण:- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- १५०

द्वितीय चरण:- अन्तर्वार्ता (Interview)

पूर्णाङ्क :- २५

प्रथम चरण:- लिखित परीक्षा योजना (Examination Scheme)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या x अङ्कभार	समय
प्रथम	Biology & Forensic Science	१००	४०	विषयगत	$३ \times १० = ३०$	३ घण्टा
					$१४ \times ५ = ७०$	
द्वितीय	नेपाल प्रहरी सेवा सम्बन्धी	५०	२०	बस्तुगत बहुउत्तर	$१० \times १ = १०$	१ घण्टा १० मिनेट
				विषयगत	लामो उत्तर $१ \times १० = १०$ छोटो उत्तर $६ \times ५ = ३०$	

द्वितीय चरण

परीक्षाको किसिम	पूर्णाङ्क	परीक्षा प्रणाली
ब्यक्तिगत अन्तर्वार्ता	२५	मौखिक

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- प्रथम पत्रमा पाठ्यक्रमका एकाईहरूबाट सोधिने प्रश्नहरूको संख्या निम्नानुसार हुनेछ भने द्वितीय पत्रमा सोधिने प्रश्न संख्या र अंकभार द्वितीय पत्रको पाठ्यक्रममा उल्लेख गरिएको छ ।

विषय	Biology						Forensic Science			
पाठ्यक्रमको एकाई	1	2	3	4	5	6	7	8	9	10
लामो प्रश्न	२ वटा						१ वटा			
छोटो प्रश्न	९ वटा						५ वटा			

४. वस्तुगत बहुउत्तर (Multiple Choice) प्रश्नहरूको उत्तर सही दिएमा प्रत्येक सही उत्तर बापत पुर्णाङ्क प्रदान गरिनेछ भने गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ। तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन।
५. प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको अन्तर्वार्तामा सम्मिलित गराइनेछ।
६. अन्तर्वार्ताको अंकभार सम्बन्धमा प्रहरी सेवाको पदमा नियुक्ति र बढुवा गर्दा अपनाउनु पर्ने सामान्य सिद्धान्त, २०६९ को अनुसूची-१९ मा व्यवस्था भए बमोजिम हुनेछ।
७. पाठ्यक्रम लागू मिति :-

सुप्रसन्न प्रहरी

Subject	Unit	No. of Questions and Weightage		Marks	Full Marks
		Long Answer Type Question (3)	Short Answer Type Questions (14)		
BIOLOGY	1.Cell Biology	2 x 10 marks = 20 marks	9 x 5 marks = 45 marks	65	100
	2.Genetics				
	3.Immunology				
	4.Endocrinology				
	5. Ecosystem				
	6.Wildlife Management				
FORENSIC SCIENCE	7.Introduction to Forensic Science	1 x 10 marks = 10 marks	5 x 5 marks = 25 marks	35	
	8.Crime Scene Investigation				
	9.Medical Jurisprudence				
	10. Introduction to Forensic Biology/Serology				

Group-A
BIOLOGY (65%)

Unit 1: Cell Biology

- Structure and function of cell components-Cell membrane, Mitochondria, Golgi complex, Lysosome, Ribosome, Nucleus, chromosomes
- Mitosis and meiosis cell division
- Chemicals of life-Carbohydrates, Lipids, Amino acids, Proteins, Nucleic acids, Minerals and Water

Unit 2: Genetics

- Mendel's work
- Chromosomal theory of inheritance
- Linkage and crossing over
- Sex determination
- Sex linked inheritance
- Gene interactions-Co-dominance, Multiple alleles, Epistasis
- Variation
- Mutation
- Genetic material-Replication, Transcription and Translation
- Population genetics-Gene pool, Allele frequency, Genotype frequencies, The Hardy-Weinberg equation

Unit 3: Immunology

- Immunity
- Structure and Functions of Immune System
- Antigen
- Antibodies-immunoglobulin
- Complement System
- Immune response
- Antigen-Antibody Reactions
- Hypersensitivity, Autoimmunity, Immunity to infection and Immunodeficiency

Unit 4: Endocrinology

- Structure and functions of thyroid, parathyroid, adrenal, hypothalamus, pituitary, thymus, pineal body, pancreas and gonads

Unit 5: Ecology

- Components of ecosystem,
- Ecosystem energetic (Energy flow through trophic level, food webs and food pyramids)
- Ecosystem managements
- Biochemical cycles (Nitrogen, Carbon, Phosphorous)

- Population: Population density, natality, mortality, immigration, emigration, pyramid, sex ratio, dispersal and population growth including potential, human population and its impacts on eco-degradation
- Pollution: Water, air, noise, and their control measures

Unit 6: Wild Life Management

- Introduction to biodiversity
- Wild Life and Its Management: Wild Life National Parks and Reserves of Nepal
- Wild life distribution in ecological Zones
- Wild life values, Economic exploitation and its impact in nature
- Definition of endangered, vulnerable, rare and threatened species
- Endangered animals of Nepal, Conservation of wild life in Nepal, Importance of wild life management,
- Predator- Prey relationship and competition.

Group-B FORENSIC SCIENCE (35%)

Unit 7: Introduction to Forensic science

- Definition
- History
- Principles
- Different branches
- Importance of forensic science
- Existing scenario of forensic science in Nepal
- Recent Advances in Forensic Science (DNA profiling, AFIS, Gas Chromatograph Mass Spectroscopy (GC-MS), etc

Unit 8: Crime Scene Investigation

- Basic steps in crime scene investigation-protection, photography, sketching, search, handling and collection of evidence, modern aids
- Crime Scene Safety-Types of Hazards, Types of Safety, Routes of Exposure, Personnel Protective Equipment
- Physical Evidence-Classification, types, sources, importance, collection, handling, preservation, labeling and forwarding of various physical evidences, Chain of custody

Unit 9: Medical Jurisprudence

- Modes of Death-Coma, syncope, asphyxia
- Changes after death-Primary relaxation, rigor mortis, secondary relaxation (putrefaction, adipocere formation, mummification)
- Death from Asphyxia-Hanging, strangulation, suffocation, drowning
- Types of wounds-Bruises or contusions, abrasions, incised, punctured and lacerated wounds

Unit 10: Introduction to Forensic Biology/Serology.

- Importance of body fluids
- Different Types of Body Fluids viz. Blood, Semen, Saliva, Sweat, Tear, Nasal Secretion, Vaginal secretion etc. as Evidence.
- Presumptive Test of Blood (Kastle Meyer Test, Benzidine Test)
- Takayama Test
- Species Identification
- ABO Blood Group and its inheritance
- Absorption Elution Technique for Dry Blood grouping
- Secretor and Non - Secretor Group
- Acid Phosphatase Test for Semen, Microscopic Examination for sperms
- Hair examination
- Skeletal remains and its importance

Sample Questions

Long Answer Type Questions

1. Describe the structure and functions of mitochondria. (10 marks)
2. Describe the causes, sources and effects of water pollution. (10 marks)
3. Describe the basic steps involved in crime scene investigation. (10 marks)

Short Answer Type Questions

1. Differentiate between DNA and RNA. (5 marks)
2. List ten endangered animals of Nepal. (5 marks)
3. Write a short note on asphyxia. (5 marks)
4. Write the functions of pancreas. (5 marks)

-समाप्त-