

नेपाल सरकार
गृह मन्त्रालय
नेपाल प्रहरी प्रधान कार्यालय
(मानवश्रोत विकास विभाग, भर्ना छनौट शाखा)
नक्साल, काठमाण्डौ ।

प्राविधिक प्रहरी नायव निरीक्षक (सिभिल/स्यानेटरी) पदको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

सेवा: नेपाल प्रहरी

उपसमूह: इन्जिनियरिङ, आवास तथा भौतिक इन्जिनियरिङ

समूह: प्राविधिक प्रहरी

श्रेणी: राजपत्र अनङ्कित प्रथम

परीक्षा योजना (Examination Scheme)

क्र.सं.	परीक्षा चरण	विवरण	पूर्णाङ्क
१.	प्रथम चरण	प्रारम्भिक तथा विस्तृत स्वास्थ्य परीक्षण	-
२.	द्वितीय चरण	लिखित परीक्षा	२००
३.	तृतीय चरण	विशेष स्वास्थ्य परीक्षण	-
४.	चतुर्थ चरण	अन्तरवार्ता	३०

प्रथम चरण:- प्रारम्भिक तथा विस्तृत स्वास्थ्य परीक्षण

- प्रहरी सेवाको पदमा नियुक्ति र बढुवा गर्दा अपनाउनु पर्ने सामान्य सिद्धान्त, २०६९ को अनुसूची-६ र ८ बमोजिम हुने ।

द्वितीय चरण:- लिखित परीक्षा योजना (Written Examination Scheme)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या अङ्कभार	समय
प्रथम	Professional and Service Specific Test (PSST)	१००	४०	वस्तुगत बहुवैकल्पिक प्रश्न (Multiple Choice)	५० प्रश्न×२ अंक = १००	४५ मिनेट
द्वितीय		१००	४०	विषयगत (Subjective)	<u>छोटो उत्तर</u> ८ प्रश्न×५ अंक = ४० <u>लामो उत्तर</u> ६ प्रश्न × १० अंक = ६०	२ घण्टा ३० मिनेट

तृतीय चरण:- विशेष स्वास्थ्य परीक्षण

- प्रहरी सेवाको पदमा नियुक्ति र बढुवा गर्दा अपनाउनु पर्ने सामान्य सिद्धान्त, २०६९ को अनुसूची-९ बमोजिम हुने ।

चतुर्थ चरण:- अन्तरवार्ता (Interview)

विषय	पूर्णाङ्क	परीक्षा प्रणाली
अन्तरवार्ता	३०	मौखिक

१. यो पाठ्यक्रमको योजना अनुसार दुई पत्रको लिखित परीक्षा हुनेछ ।
२. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
३. पाठ्यक्रमको प्रथम र द्वितीय पत्रको विषयवस्तु एउटै हुनेछ ।
४. प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
५. लिखित परीक्षाको प्रथम तथा द्वितीय पत्रको पाठ्यक्रमका इकाइहरूको प्रश्नहरूको संख्या निम्नानुसार हुनेछ ।

प्रथम पत्रका इकाइ	1	2	3	4	5	6	7	8	9	10	11	12
प्रथम पत्रका प्रश्न संख्या	4	5	2	2	3	4	5	4	5	3	3	10
द्वितीय पत्रका खण्ड	खण्ड-क (A)						खण्ड-ख (B)					खण्ड-ग (C)
द्वितीय पत्रका इकाइ	1	2	3	4	5	6	7	8	9	10	11	12
द्वितीय पत्रका प्रश्न संख्या	छोटो	3					3					2
	लामो	3					3					-

६. यस पाठ्यक्रममा जे सुकै कुरा लेखिएको भए तापनि पाठ्यक्रममा परेका ऐन नियमहरू तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा रहेको सम्झनु पर्छ ।
७. वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको उत्तर सही दिएमा प्रत्येक सही उत्तर बापत २ (दुई) अंक दिईने छ भने गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २०% अंक कट्टा गरिने छ । तर उत्तर नदिएमा त्यस बापत अंक दिईने छैन र अंक कट्टा पनि गरिने छैन ।
८. द्वितीय पत्रको विषयगत प्रश्नका लागि तोकिएका १० अङ्कका प्रश्नहरूको हकमा १० अङ्कको एउटा लामो प्रश्न वा एउटै प्रश्नका दुई वा दुई भन्दा बढी भाग (Two or more parts of a single question) वा एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरू (Short notes) सोध्न सकिनेछ ।
९. द्वितीय पत्रको पाठ्यक्रमलाई ३ वटा खण्डमा विभाजन गरिएको छ । ३ वटा खण्डको लागि ३ वटै उत्तरपुस्तिका दिईनेछ र परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
१०. यस भन्दा अगाडि लागू भएको माथि उल्लेखित समूहको पाठ्यक्रम खारेज गरिएको छ ।

पाठ्यक्रम लागू मिति:- २०७९/१०/१९ गते ।

लिखित परीक्षा (Written Examination)

प्रथम र द्वितीय पत्र :- Professional and Service Specific Test (PSST)

खण्ड “क” (Section A)

1. Surveying

- 1.1 Classifications and Principle of Surveying
- 1.2 Scales, plans and maps
- 1.3 Entry into survey field books and level books
- 1.4 Methods and Principles of levelling, levelling instruments and accessories
- 1.5 Plane Tabling : Equipments required; Methods of plane tabling; Two and three point problems
- 1.6 Theodolite and Traverse surveying : Basic difference between different theodolites; Temporary adjustments of theodolites; Fundamental lines and desired relations; Tacheometry: stadia method; Trigonometrical levelling; Checks in closed traverse
- 1.7 Contouring : Characteristics of contour lines; Method of locating contours; Contour plotting
- 1.8 Setting Out : Small buildings, Simple curves

2. Construction Materials

- 2.1 Stone : Formation and availability of stones in Nepal; Methods of laying and construction with various stones
- 2.2 Cement : Different cements: Ingredients, properties and manufacture; Storage and transport; Admixtures
- 2.3 Clay and Clay Products: Brick-type, manufacture, laying, bonds
- 2.4 Paints and Varnishes : Type and selection; Preparation techniques and Uses
- 2.5 Bitumen : Type, Selection and Uses

3. Mechanics of Materials and Structures

- 3.1 Mechanics of Materials : Internal effects of loading, Ultimate strength and working stress of materials
- 3.2 Mechanics of Beams : Shear force and bending moment; Thrust, shear and bending moment diagrams for statically determinate beams under various types of loading
- 3.3 Simple Strut Theory

4. Hydraulics

- 4.1 Properties of fluid: mass, weight, specific weight, density, specific volume, specific gravity, viscosity; Pressure and Pascal's law
- 4.2 Hydro-Kinematics and Hydro-Dynamics : Energy of flowing liquid: Kinetic energy, potential energy, internal energy
- 4.3 Measurement of Discharge : Weirs and notches; Discharge formulas
- 4.4 Flows : Characteristics of pipe flow and open channel flow

5. Soil Mechanics

- 5.1 Soil types and classification; Three phase system of soil; Unit Weight of soil mass: bulk density, saturated density, submerged density and dry density; Interrelationship between specific gravity, void ratio, porosity, degree of saturation, percentage of air voids air content and density index
- 5.2 Soil Water Relation : Terzaghi's principle of effective stress; Darcy's law; Factors affecting permeability
- 5.3 Compaction of soil : Factors affecting soil compaction; Optimum moisture content; Relation between dry density and moisture content
- 5.4 Shear Strength of Soils : Mohr-Coulomb failure theory; Cohesion and angle of internal friction

- 5.5 Earth Pressures: Active and passive earth pressures; Lateral earth pressure theory; Rankine's earth pressure theory
- 5.6 Foundation Engineering : Terzaghi's general bearing capacity formulas and their application

6. Structural Design

- 6.1 R.C. Sections in Bending : Under reinforced, over reinforced and balanced sections; Analysis of single and double reinforced rectangular sections
- 6.2 Shear and Bond for R.C. Sections : Shear resistance of a R.C. section; Types of Shear reinforcement and their design; Determination of anchorage length
- 6.3 Axially Loaded R.C. Columns : Short and long columns; Design of a rectangular column section
- 6.4 Design and Drafting of R.C. Structures : Singly and doubly reinforced rectangular beams; Simple one-way and two-way slabs; Axially loaded short and long columns

खण्ड “ख” (Section B)

7. Building Construction Technology

- 7.1 Foundations : Subsoil exploration; Type and suitability of different foundations: Shallow, deep; Shoring and dewatering; Design of simple brick or stone masonry foundations
- 7.2 Walls : Type of walls and their functions; Choosing wall thickness, Height to length relation; Use of scaffolding
- 7.3 Damp Proofing : Source of Dampness; Remedial measures to prevent dampness
- 7.4 Concrete Technology : Constituents of cement concrete; Grading of aggregates; Concrete mixes; Water cement ratio; Factors affecting strength of concrete; Form work; Curing
- 7.5 Wood work: Frame and shutters of door and window; Timber construction of upper floors; Design and construction of stairs
- 7.6 Flooring and Finishing : Floor finishes - brick, concrete, flagstone; Plastering

8. Water Supply and Sanitation Engineering

- 8.1 Objectives of water supply system
- 8.2 Source of water and its selection: gravity and artesian springs, shallow and deep wells; infiltration galleries.
- 8.3 Gravity Water Supply System : Design period; Determination of daily water demand; Determination of storage tank capacity; Selection of pipe; Pipe line design and hydraulic grade line
- 8.4 Design of Sewer: Quantity of sanitary sewage; Maximum, Minimum and self-cleaning velocity
- 8.5 Excreta Disposal and Unsewered Area : Pit latrine; Design of septic tank

9. Transportation Engineering

- 9.1 Introduction to transportation systems
- 9.2 Historic development of roads in Nepal
- 9.3 Classification of road in Nepal
- 9.4 Basic requirements of road alignment
- 9.5 Geometric Design : Basic design control and criteria for design; Elements of cross section, typical cross-section for all roads in filling and cutting; Camber; Determination of radius of horizontal curves; Super elevation; Sight distances; Gradient; Use of Nepal Road Standard and subsequent revision in road design
- 9.6 Drainage System : Importance and requirements of a good drainage system
- 9.7 Road Pavement : Pavement structure and its components - subgrade, sub-base, base and surface courses
- 9.8 Road Machineries : Earth moving and compacting machines
- 9.9 Road Construction Technology
- 9.10 Bridges : T-beam bridge; Timber bridges

- 9.11 Road Maintenance and Repair : Type of maintenance Works; Tracks and Trails
 9.12 Airport Engineering : Introduction to Air Transport System; Classification of Airports; Airport terminologies; Airport Maintenance (Types and Methods)

10. Estimating and Costing

- 10.1 Main items of work
 10.2 Units of measurement and payment of various items of work and material
 10.3 Standard estimate formats of government offices
 10.4 Rate Analysis : Basic general knowledge on the use of rate analysis norms of Government of Nepal and approved district rates
 10.5 Specifications and its interpretation
 10.6 Valuation : Methods of valuation; general knowledge of standard formats used by commercial banks and NIDC for valuation

11. Construction Management

- 11.1 Organization : Need for organization; Responsibilities of a civil sub-engineer; Relation between Owner, Contractor and Engineer
 11.2 Site Management : Preparation of site plan; Organizing labor; Measures to improve labor efficiency; Accident prevention
 11.3 Contract Procedure : Contracts; Force account and day- works; Types of contracts; Tender and tender notice; Bid security; Preparation before inviting tender; Agreement; Conditions of contract; Construction supervision
 11.4 Accounts : Administrative approval and technical sanction; Familiarity with standard account keeping formats used in governmental organizations; Muster roll; Completion report
 11.5 Planning and Control : Construction schedule; Equipment and materials schedule; Construction stages and operations; Bar chart

खण्ड “ग” (Section-C)

12. सामान्य ज्ञान तथा नेपाल प्रहरी सेवा सम्बन्धी

- क. नेपालको भूगोल सम्बन्धी सामान्य जानकारी (भौगोलिक अवस्था, स्वरूप, किसिम र विशेषताहरू, हावापानीको किसिम र विशेषता, जल सम्पदा: स्थिति र महत्व, वन सम्पदा: अवस्था र महत्व, नेपालका प्रमुख हिमशिखरहरू, तालतलैया, झरना, भञ्ज्याङ।
 ख. इतिहास र संस्कृति सम्बन्धी सामान्य जानकारी (आधुनिक नेपालको इतिहास (पृथ्वीनारायण शाह देखी हालसम्म), नेपालको सांस्कृतिक, धार्मिक एवं मौलिक परम्परा, जातजाति, भाषाभाषी, कला र साहित्य सम्बन्धी सामान्य जानकारी।
 ग. नेपालको वर्तमान संविधान २०७२ (भाग १, ३, ४, ५, २८ र अनुसूचीहरू)
 घ. जनसंख्या र वातावरण सम्बन्धी सामान्य जानकारी (जनसंख्या, शहरीकरण, बसोवास (बँसाईसराई), जैविक विविधता, जलवायु परिवर्तन, वातावरण तथा प्रदुषण)
 ङ. समसामयिक घटना तथा नविनतम् विषयवस्तुहरू: (राष्ट्रिय तथा अन्तर्राष्ट्रिय महत्वका राजनैतिक, सामाजिक, आर्थिक, वैज्ञानिक, सांस्कृतिक, खेलकूद, पुरस्कार, कला, साहित्य, संगीत सम्बन्धी)
 च. नेपाल प्रहरीको पृष्ठभूमि (वि.स. २००७ साल देखि हालसम्म) र वर्तमान अवस्था
 छ. प्रहरी ऐन, २०१२ र प्रहरी नियमावली, २०७१ (संशोधन सहित) का मुख्य-मुख्य व्यवस्थाहरू (संगठनात्मक स्वरूप, सेवाको प्रकार, दर्ज्यानी चिन्ह, पद तथा श्रेणी सेवा, शर्त र सुविधा, प्रहरी आचरण, नियुक्ति र अवकाश सम्बन्धी व्यवस्था)
 ज. विविध:- नेपाल प्रहरी र अन्य सुरक्षा निकायहरू (नेपाली सेना, सशस्त्र प्रहरी बल नेपाल र राष्ट्रिय अनुसन्धान विभाग) संगको सम्बन्ध, सार्क, संयुक्त राष्ट्रसंघ र इन्टरपोल सम्बन्धी जानकारी।

लिखित परीक्षाको नमूना प्रश्नपत्र

वस्तुगत बहुवैकल्पिक प्रश्न (Multiple Choice Question)

1. Irrigation canals are generally aligned along
 - a) ridge line
 - b) contour line
 - c) valley line
 - d) straight line.
2. Thickened part of a flat slab over its supporting column, is technically known as
 - a) drop panel
 - b) capital
 - c) column head
 - d) none of these.
3. Final technical authority of a project lies with
 - a) Assistant Engineer
 - b) Executive Engineer
 - c) Superintending Engineer
 - d) Chief Engineer.
4. Design of horizontal and vertical alignments, super-elevation, sight distance and grades, is worst affected by
 - a) width of the vehicle
 - b) length of the vehicle
 - c) height of the vehicle
 - d) speed of the vehicle
5. Thickness of a pavement may be reduced considerably by
 - a) compaction of soil
 - b) stabilization of soil
 - c) drainage of soil
 - d) combination of all the above.

छोटो प्रश्न (Short Question)

1. Write the properties of a first-class brick?
2. What are principle of surveying. Explain tacheometric method of surveying?

लामो प्रश्न (Long Question)

1. Define soil compaction and consolidation. what are the factor affecting soil compaction?
2. Write down type of valve & fitting. write down about type of pipe used for water supply system?

-समाप्त-