

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

प्राविधिक प्रहरी निरीक्षक (सिभिल इन्जिनियर) पदको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

सेवा: नेपाल प्रहरी

उपसमूह: इन्जिनियरिङ, आवास तथा भौतिक इन्जिनियरिङ

समूह: प्राविधिक प्रहरी

श्रेणी: राजपत्राङ्कित तृतीय

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)	१०० प्रश्न×१ अंक = १००	१ घण्टा १५ मिनेट
द्वितीय		१००	४०	विषयगत (Subjective)	<u>छोटो उत्तर</u> ४ प्रश्न×५ अंक = २० <u>लामो उत्तर</u> ८ प्रश्न ×१० अंक = ८०	३ घण्टा

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

- यो पाठ्यक्रमको योजना अनुसार दुई पत्रको लिखित परीक्षा हुनेछ ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- पाठ्यक्रमको प्रथम र द्वितीय पत्रको विषयवस्तु एउटै हुनेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- 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	13	14
प्रथम पत्रका प्रश्न संख्या	7	8	7	7	7	4	2	2	10	10	6	10	10	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	13	14
द्वितीय पत्रका	छोटो	1								1				2
प्रश्न संख्या	लामो	4								4				-

- 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 ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको उत्तर सही दिएमा प्रत्येक सही उत्तर बापत १ (एक) 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 ।
- 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 ।
- 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 ।
- 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. Engineering Survey

- 1.1 Introduction and basic principles, classification of surveys
- 1.2 Linear measurement techniques: chain and tape method, ranging rods and arrows, representation of measurement and common scales, sources of errors, effect of slope and slope correction, correction for chain and tape measurements, abney level and clinometers
- 1.3 Compass: types of compass, problems and sources of errors in compass survey
- 1.4 Plane table surveying: principles and methods of plane tabling
- 1.5 Leveling: principle of leveling, temporary and permanent adjustment of level, bench marks, booking methods and their recording, longitudinal and cross sectioning, reciprocal leveling, trigonometric leveling
- 1.6 Contouring: contour interval and characteristics of contours, methods of contouring, interpolation, use of contour map
- 1.7 Theodolite traversing: need of traverse and its significance, principle of traverse, computation of coordinates; adjustment of closed traverse and linked traverse, closing errors
- 1.8 Tacheometry: principle, tacheometric formula, relation of distance and elevation
- 1.9 Uses of total station and electronic distance measuring instruments
- 1.10 Curves: types and suitability, elements, geometry and setting out of curves (simple circular curve, vertical curve, transition curve)
- 1.11 Calculation of area and volume: methods of area calculation of land, methods of area and volume calculation of cut and fill, mass haul diagram

2. Construction Materials

- 2.1 Properties of building materials: physical, chemical, constituents, thermal
- 2.2 Stones: characteristics and requirements of stones as a building materials
- 2.3 Ceramic materials: ceramic tiles, mosaic tile, brick types and testing
- 2.4 Cementing materials: types and properties of lime and cement; cement mortar tests
- 2.5 Metals: types and properties of steel, alloys
- 2.6 Timber and wood: timber trees in Nepal, types and properties of wood
- 2.7 Miscellaneous materials: asphaltic materials, paints and varnishes, polymers
- 2.8 Soil properties and its parameters
- 2.9 Local and modern building construction material in Nepal

3. Concrete Technology

- 3.1 Constituents and properties of concrete (physical and chemical)
- 3.2 Water cement ratio
- 3.3 Grade and strength of concrete, concrete mix design, testing of concrete
- 3.4 Mixing, transportation pouring and curing of concrete
- 3.5 Admixtures
- 3.6 High strength concrete
- 3.7 Pre-stressed concrete

4. Construction Management

- 4.1 Construction scheduling and planning: network techniques (CPM, PERT) and bar charts
- 4.2 Contractual procedure and management: types of contract, bid and bid notice, preparation of bidding document, contractors pre-qualification, evaluation of tenders and selection of contractor, contract acceptance, condition of contract, quotation and direct purchase, classifications of contractors, dispute resolution, muster roll
- 4.3 Material management: procurement procedures and materials handling

- 4.4 Cost, quality and time control
- 4.5 Project management
- 4.6 Occupational health and safety
- 4.7 Project monitoring and evaluation
- 4.8 Quality assurance plan
- 4.9 Variation, alteration and omissions

5. **Estimating, Costing, Specification and Valuation**

- 5.1 Types of estimates and their specific uses
- 5.2 Methods of calculating quantities
- 5.3 Key components of estimating norms and rate analysis
- 5.4 Preparation of bill of quantities
- 5.5 Purpose, types and importance of specification
- 5.6 Purpose, principles and methods of valuation

6. **Engineering Drawing**

- 6.1 Drawing sheet composition and its essential components
- 6.2 Suitable scales, site plans, preliminary drawings, working drawings
- 6.3 Theory of projection drawing: perspective, orthographic and axonometric projection, first and third angle projection
- 6.4 Drafting tools and equipments
- 6.5 Drafting conventions and symbols
- 6.6 Topographic, electrical, plumbing and structural drawings
- 6.7 Techniques of free hand drawing
- 6.8 Community buildings: School and hospital buildings and their design considerations

7. **Engineering Economics**

- 7.1 Benefit cost analysis, cost classification, sensitivity analysis, internal rate of return, time value of money; economic equilibrium, demand, supply and production, net present value, financial and economic evaluation

8. **Professional Practices**

- 8.1 Ethics, integrity and professionalism: code of conduct and guidelines for professional engineering practices
- 8.2 Nepal Engineering Council Act, 2055; and regulations, 2056
- 8.3 Relation with clients, contractor and fellow professionals
- 8.4 Public procurement practices for works, goods and services and its importance
- 8.5 National Building Code: Hierarchy of building codes and its application, procedure for implementation of building code in Nepal
- 8.6 Building Bylaws

खण्ड “ख” (Section-B)

9. **Structural Engineering**

- 9.1 Center of gravity, moment of inertia, radius of gyration, stresses and strains, theory of torsion and flexure
- 9.2 Analysis of beams and frames: bending moment, shear force and deflection of beams and frames; Determinate structures (energy methods), three hinged systems, suspension cable system; Plastic analysis of beam and frame
- 9.3 Indeterminate structures: slope deflection method and moment distribution method, use of influence line diagrams for simple beams, unit load method, two hinged arch
- 9.4 Reinforced concrete structures: difference between working stress and limit state philosophy, design of beam and slab, analysis of RC beams and slabs in bending, shear, deflection, bond

and end anchorage, design of axially loaded columns; isolated and combined footings, introduction to pre-stressed concrete

- 9.5 Steel and timber structures: standard and built-up sections: design of riveted, bolted and welded connections, design of simple elements such as ties, struts, axially loaded and eccentric columns, column bases, design principles of timber beams and columns
- 9.6 Requirements of earthquake resistant building construction
- 9.7 Mandatory rule of thumb in building design
- 9.8 Structural design of bridge: types of bridges, types of loads, forces and stresses, live load, impact load, wind load, longitudinal forces, lateral loads, centrifugal force, width of roadway and footway, general design requirements, solid slab bridges, deck girder bridges, distribution of live loads on longitudinal beams, method of distribution coefficients, Courbon's method, design of a T- beam bridge, balanced cantilever bridge, design of box culvert

10. Geotechnical Engineering

- 10.1 Formation of soil, general classification of soil depending on transporting agent and deposit media; Three phases of soil: basic terms, relation between basic terms, volumetric relationship: mass and volume, weight and volume, specific gravity of soil and lab test, field density and determination methods; Types of water in soil, moisture content and relationship, organic content in soil
- 10.2 Index properties of soil: grain size distribution and types of soil depending on grain size distribution, consistency limit, relative density, lab test of index properties
- 10.3 Types of rock, dip, strike, fold, fault, cleavage, geographical divisions of Nepal, earthquake: causes of earthquake, types of waves, grading of earthquake, seismic fault line in Nepal
- 10.4 Tunneling: types of tunnels, component parts of a tunnel and tunnel cross section, survey for tunnel alignment, drainage, lighting and ventilation requirements for tunnels, method of tunneling in soft soils and rock
- 10.5 Soil Mechanics: Identification and classification of soils, Field identification of soils and soil classification: descriptive, textural, ISI, MIT and USCS; Permeability of soils; Factors affecting permeability of soil, determination of coefficient of permeability: laboratory and field methods; Effective stress; Factors affecting effective stress, capillary rise, quick sand condition
- 10.6 Seepage analysis: Flow net, application of flow net, seepage below concrete dam, sheet pile and safety check, seepage analysis through earthen dam and filter layer design, techniques to reduce discharge and to increase safety of dam
- 10.7 Compaction of soil: Concept of compaction, lab test, factors affecting compaction, specification of compaction, field control of compaction, methods of compaction in field and their suitability, special parameters to be considered for compaction in road, earthen dam
- 10.8 Shear strength of soils: Concept of shear strength, principal planes and principal stresses, Mohr- Coulomb theory of shear strength, calculation of normal stress and shear Stress at different plane, relation of principle stress at failure condition, types of shear tests: direct shear test, unconfined compression test, triaxial test, vane shear test
- 10.9 Consolidation and settlements: Concept of consolidation, types of consolidation, test of consolidation, NC, OC, OCR, pre-consolidation pressure, calculation of settlement, settlement of structures resting on soil: its nature, causes and remedial measures
- 10.10 Stability of slopes: Causes of slope failures, types of slope and slope failures, critical surfaces and factor of safety, method of stability analysis and stability number
- 10.11 Bio-engineering: concept, principles, components, advantages and uses
- 10.12 Foundation Engineering:
 - 10.12.1 Types of foundation, factors affecting on selection of foundation, requirement and criteria of ideal foundation, types of load for design of foundation, criteria for selection of depth of foundation; Earth pressure and retaining structures; Rankine's earth pressure theory, Coloumb's earth pressure theory, trial wedge theory, types of earth pressure, types of retaining wall, stability analysis of earth retaining structures,

- techniques to increase stability of retaining wall
- 10.12.2 Bearing capacity and settlements: Types of bearing capacity and factors influencing bearing capacity, effects of various factors on bearing capacity, modes of foundation failure, Terzaghi's general bearing capacity theory, ultimate bearing capacity of cohesionless and cohesive soils, settlement: types, nature and effects
- 10.12.3 Types of foundation and their suitability in context of Nepal
- 10.12.4 Condition to use spread or strap or combined footing; mat: types, bearing capacity, construction approach, floating mat, compensating mat; pile: types, load carrying capacity, negative skin friction (NSF) and calculation; comparison between pile, pier, and caisson; caisson: types, bearing capacity, construction of well, tilt and shift of well and its retrofication and prevention
- 10.12.5 Design of foundation: Design of spread foundation, combined footing, strap footing, mat foundation, pile foundation, well foundation
- 10.12.6 Foundation stabilization, underpinning and geotechnical process
- 10.12.7 Soil stabilization, stone column, sand pile, dynamic deep compaction, grouting and its methods, methods of underpinning, methods of dewatering
- 10.12.8 Site Investigation and Soil Exploration: Purpose of site investigation, planning of investigation, stages of investigation, methods of boring, types of soil samples
- 10.12.9 In-situ test: standard penetration test, dynamic cone penetration test, correction of N value, calculation of bearing capacity using N value for isolated footing, mat, pile and well, plate load test, pile load test; Preparation of site investigation report

11. Water Resource Engineering

11.1 Hydrology and Sediment

- 11.1.1 Rainfall measurements and related analysis
- 11.1.2 Flow measurements, rating curve and generation of flow data
- 11.1.3 Estimation of long term daily and monthly flows, low flows
- 11.1.4 Hydrograph analysis, synthetic unit hydrographs
- 11.1.5 Flood frequency analysis, estimation of design flood
- 11.1.6 Collection of sediment data, sediment rating curve, estimation of sediment yield and concentration, reservoir sedimentation
- 11.1.7 Ground water hydrology, Swallow and deep tube well construction

11.2 Hydraulics

- 11.2.1 Fluid pressure, fluid kinematics, dynamics of flows
- 11.2.2 Boundary layers, uniform flow, steady flow, laminar and turbulent flow
- 11.2.3 Bernoulli's equation and its applications
- 11.2.4 Laminar and turbulent flow in pipes
- 11.2.5 Concept of specific energy and gradually varied flows in open channel
- 11.2.6 Hydraulic jump and its types, flow profiles

12. Transportation Engineering

12.1 Highway engineering

- 12.1.1 Highway Planning and Survey: Approach to road planning: establishing economic and environmental viability, evaluating alternatives, classification of roads, national road networks, road survey and quantity calculation, process of identifying best route location, map study and reconnaissance survey, preliminary and detail survey, recommendation for best alignment, highway alignment and controlling factors
- 12.1.2 Geometric Design of Highway : Basic design control and criteria, vehicle characteristics, traffic volume & its composition, topography, elements of highway cross section, highway curves: tangents, type of curves, transition curves, reverse curves and their functions, circular curves, super elevation, stopping sight distance, vertical curves, gradients, average gradients and ruling gradient, Crest curve and sag curves, design

- considerations of horizontal and vertical alignment, extra widening, set back distance
- 12.1.3 Hill Roads: Design, geological conditions and alignment selection criteria, gradient selection, Hair Pin Bends, horizontal curves, passing lane in hill roads, retaining and slope protection structures in hill roads, use of bio-engineering, drainage structures, stability of formation width and cut and fill slopes
 - 12.1.4 Highway Drainage: surface drainage and estimation of water quantity, design of drainage structures, erosion control and dissipating structures, subsurface drainage, cross drainage structures and types
 - 12.1.5 Highway Materials: Binding materials, types of aggregate and tests on their gradation, strength, durability, mathematical and graphical method of aggregate gradation, binding materials, bitumen, road tar, penetration test, consistency tests, flash point test, composition tests, bituminous mixes and asphalt concrete, open and dense graded mixes, design of asphalt mixes,
 - 12.1.6 Traffic Engineering : Traffic engineering and scope, interrelationships between human/machinery/environmental elements, impact of human and vehicular characteristics on traffic planning, traffic operations and regulations driver and vehicle control, traffic control devices, traffic flow counts and speed studies, traffic flow characteristics traffic count and presentation, O and D studies, parking studies and accident study and analysis, basic requirements of intersections, types of intersections and configuration, channelized and channelized intersections, design of intersections, traffic signs, signals, road marking, road delination, road lighting, factors influencing night visibility, design of the lighting system, traffic projection and forecasting
 - 12.1.7 Road Pavement: Types of road pavements, flexible and rigid pavement, loads and other factors controlling pavement, design methods for flexible pavements, design methods for rigid pavements, stress due to load, temperature and sub-grade friction, functions of pavement structure, axle load, damaging factor of axle loads, different types of pavement surface
 - 12.1.8 Road Construction Technology : Activities and techniques used in road construction, tools, equipment and plants used in road construction, preparation of road subgrade, excavation, filling, compaction, moisture density relationship, field compaction control, soil stabilization, Construction of asphalt concrete layers including prime coat, tack coat, and seal coat, construction procedure of penetration macadam, construction procedure of bituminous bound macadam, construction procedure of plain cement concrete pavements
 - 12.1.9 Highway Maintenance, Repair and Rehabilitation: Classification of maintenance activities for on road and off road structures, inspection, prioritization and planning of maintenance operations, evaluation of pavement distress and pavement condition, types and methods of pavement repair, regular, recurrent, periodic maintenance, types of overlay and strengthening of existing pavements
- 12.2 Airport Engineering
- 12.2.1 History of civil aviation in Nepal; Role and functions of Ministry of Culture, Tourism and Civil Aviation (MoCTCA) and Civil Aviation Authority of Nepal; Role of International Civil Aviation Organization (ICAO); The economic, political, and social roles of airports
 - 12.2.2 Airport Planning: Planning consideration - Airport and airport systems, airport system planning, airport master plan and strategic plan, information required, preliminary feasibility, role of financing
 - 12.2.3 STOL Port: Physical Character is tics of STOL Ports, importance of STOL Ports in the context of topography of Nepal and their role in the economic development of Nepal
 - 12.2.4 Heliport: Physical Characteristics of Heliports. Obstacle Limitation Surfaces and Requirement
 - 12.2.5 Airport drainage: Purpose, typical drainage layout, sub-surface drainage

13. Public Health Engineering

13.1 Water Supply

- 13.1.1 Introduction: Potable, contaminated and wholesome water, typical components of water supply schemes
- 13.1.2 Sources of water: Surface source, ground water occurrences and prospecting, chemical characteristics and properties of ground water, recharge of ground water, ground water recovery, tube well design, selection of water sources
- 13.1.3 Quality of water: Types and sources of water pollution, effects of pollution (river, lake and reservoir), pollution of ground water, hardness of water, alkalinity in water, living organism in water, water borne diseases, physical, chemical and biological test of water, water drinking quality standards (WHO & Nepal)
- 13.1.4 Quantity of water: Types of water demand, design period, methods of population forecasting, variation in demand of water, factors affecting demand of water
- 13.1.5 Intake works: Site selection, characteristics of river, reservoir and spring intake, types of hand pumps including suction hand pump, submersible hand pumps
- 13.1.6 Water treatment: Treatment systems- screening, plain sedimentation, sedimentation with coagulation, flocculation, filtration (Slow sand filtration /Rapid filtration), disinfection, softening, and miscellaneous treatments (aeration, removal of iron and manganese, removal of arsenic and removal of colour, odour and taste)
- 13.1.7 Reservoirs and distribution systems: Types of reservoirs, sizing of reservoirs: mass curve method, peak demand method etc. for reservoir design, Water supply system: pumping system, gravity system, Layout of the water supply system, Pipeline design: design criteria, design of transmission and distribution system (including pipe networks)
- 13.1.8 Operation and maintenance of water supply system
- 13.1.9 Design specific of gravity flow rural water supply system in Nepal

13.2 Sanitary Engineering

- 13.2.1 Introduction: Importance of waste water and solid waste management, Sanitation system, Types of sewerage systems
- 13.2.2 Quantity of wastewater: Sources and nature of wastewater, effluent characteristics, Factors affecting sanitary sewage, Determination of quantity of sanitary sewage, Determination of quantity of storm water
- 13.2.3 Characteristics and examination of sewage: Physical, chemical and biological characteristics of sewage, Decomposition of sewage, aerobic and anaerobic decomposition, Biochemical oxidation demand (BOD) and chemical oxidation demand (COD), Test of solids, Dissolved oxygen (DO), pH-value, chlorine demand
- 13.2.4 Design and construction of sewers: Typical design periods, flow velocity, self-cleaning velocity, flow diagrams, hydraulic formulae and gradients, Estimation of quantity of sanitary sewage, collection systems, sewer design criteria, shape of sewers, types of sewers, sewer materials: requirements, salt glazed stoneware, and plain or reinforced cement concrete pipes, plastic, steel, brick, sanitary and storm water sewers for separate and combined sewer systems, construction of sewer: excavation, laying, jointing of sewer, testing of sewer, water test and air test
- 13.2.5 Sewage treatment: Treatment methods, BOD removal, design criteria, activated sludge, oxidation ponds and ditches, aerated lagoons and lagoons, Sewage filtration, intermittent sand filter, contact bed, trickling filters, bio- filters and design of trickling and bio- filters
- 13.2.6 Sewage disposal: Sewage disposal by dilution: essential conditions for dilution, self-purification of streams, factors affecting self –purification, the oxygen sag curve (streeter-phelps equation), Sewage treatment by land treatment
- 13.2.7 Sludge treatment and disposal: Sources of sludge and necessity of treatment, Aerobic and anaerobic digestion, Methods of sludge treatment: grinding and blending, thickening, stabilization, dewatering, drying, composting and incineration, Methods of sludge disposal: spreading on land, lagooning, dumping and land filling

13.3 Environment

- 13.3.1 General introduction of air pollutants, its causes, impacts and remedial measures
- 13.3.2 Human excreta and its characteristics, pollution caused by excreta
- 13.3.3 Health aspects of water supply and sanitation
- 13.3.4 Green house effects, its impacts and remedial measures
- 13.3.5 Solid waste management, Types and characteristics of solid waste
- 13.3.6 Garbage collection and disposal
- 13.3.7 Methods of solid waste disposal: dumping, sanitary landfill, incineration and composting
- 13.3.8 Concept of environmental assessment: Initial environmental examination (IEE), Environment impact assessment (EIA), role of EIA, Types of environmental impacts, and EIA principles
- 13.3.9 Government rules and regulations and procedures for EIA

खण्ड “ग” (Section-C)

14. सामान्य ज्ञान तथा नेपाल प्रहरी सेवा सम्बन्धी

- क. नेपालको भूगोल सम्बन्धी सामान्य जानकारी (भौगोलिक अवस्था, स्वरूप, किसिम र विशेषताहरू, हावापानी किसिम र विशेषता, जल सम्पदा: स्थिति र महत्व, वन सम्पदा: अवस्था र महत्व, संरक्षण क्षेत्रहरू तथा वन विनाशका कारण र संरक्षणका उपायहरू, 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 प्रदूषण)
- 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, प्रहरी कर्मचारीको काम-कर्तव्य अधिकार, नेपाल प्रहरीमा प्राविधिक प्रहरी कर्मचारीको महत्व र आवश्यकता, नेपाल प्रहरी कार्यालयको स्थापना र कार्यालय प्रमुख सम्बन्धी व्यवस्था)
- ज. विविध:- सुरक्षा समिति (केन्द्र, प्रदेश र जिल्ला), नेपाल प्रहरी र अन्य सुरक्षा निकायहरू (नेपाली सेना, सशस्त्र प्रहरी बल नेपाल र राष्ट्रिय अनुसन्धान विभाग) संगको सम्बन्ध, अपराध परिचय, महत्व र प्रविधिको प्रयोग, विपद व्यवस्थापनमा नेपाल प्रहरी, सार्क, संयुक्त राष्ट्रसंघ, इन्टरपोल सम्बन्धी जानकारी ।

लिखित परीक्षाको नमूना प्रश्नपत्र

वस्तुगत बहुवैकल्पिक प्रश्न (Multiple Choice Question)

1. The maximum bending moment due to a moving load on a simply supported beam occurs.
 - a) At the mid span
 - b) Under the load
 - c) At the supports
 - d) Anywhere in the beam
2. Strain energy of any member may be defined as work done on it
 - a) To deform it
 - b) To resist shorting
 - c) To resist elongation
 - d) All of the above
3. The law "stress is proportional to strain within certain limits" is formulated by
 - a) Thomas Young
 - b) Poisson
 - c) Mohr
 - d) Robert Hook
4. In a shaft subjected to pure torsion maximum shear stress will occur at
 - a) Centre of shaft
 - b) A distance of semi-radius from centre
 - c) Periphery
 - d) None of the above
5. Which of the following can fulfill the objective of the airport survey?
 - a) Electrical line map
 - b) Water line map
 - c) Characteristics of soil
 - d) Cable line map

छोटो प्रश्न (Short Question)

1. Define soil compaction and consolidation. what are the factors affecting soil compaction.?
2. What are the controlling factors for the solution of road alignment?

लामो प्रश्न (Long Question)

1. What are the different factors to be considered in designing foundation for building? Explain about different types of foundation used in commercial buildings.
2. Explain the concept of Environmental impact assessment in development project.

-समाप्त-