

प्रदेश लोक सेवा आयोग

सुदूरपश्चिम प्रदेश

प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तर्गत कृषि सेवा, एगू. इन्जिनियरिङ समूह, सातौं तह, कृषि इन्जिनियर वा सो सरह पदको खुला, अन्तर तह र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

यस पाठ्यक्रम योजनालाई निम्न अनुसार दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण : लिखित परीक्षा (Written Examination)

पूर्णांक : २००

द्वितीय चरण : (क) सामूहिक परीक्षण(Group Test)

पूर्णांक : १०

(ख) अन्तरवार्ता(Interview)

पूर्णांक : २५

**परीक्षा योजना (Examination Scheme)**

प्रथम चरण : लिखित परीक्षा (Written Examination)

पूर्णांक : २००

पत्र	विषय	खण्ड	पूर्णांक	उत्तीर्णांक	परीक्षा प्रणाली		प्रश्न × अंक	समय
प्रथम	General Subject	खण्ड (क) General Awareness & General Reasoning Test	100	40	वस्तुगत (Objective)	(MCQs)	50 × 1	1:30 Hrs
		खण्ड (ख) General Technical Subject					50 × 1	
द्वितीय	Technical Subject		100	40	विषयगत (Subjective)	छोटो उत्तर लामो उत्तर	4 × 5 8 × 10	3 Hrs

द्वितीय चरण : सामूहिक परीक्षण (Group Test) र अन्तरवार्ता (Interview)

पूर्णांक : ३५

पत्र/विषय	पूर्णांक	उत्तीर्णांक	परीक्षा प्रणाली	समय
सामूहिक परीक्षण (Group Test)	१०	-	सामूहिक छलफल (Group Discussion)	३० मिनेट
अन्तरवार्ता (Interview)	२५	-	मौखिक (Oral)	-

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुबै हुन सक्नेछ ।
- प्रथम पत्र र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- वस्तुगत बहुवैकल्पिक प्रश्नहरू (Multiple Choice Questions) को गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अंक कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अंक दिइने छैन र अंक कट्टा पनि गरिने छैन ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।
- विषयगत प्रश्नका लागि तोकिएका १० अंकका प्रश्नहरूको हकमा १० अंकको 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 सकिने छ ।
- द्वितीय पत्रमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तर पुस्तिकाहरू हुनेछन । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डको उत्तर पुस्तिकामा लेख्नु पर्नेछ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका ऐन, नियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि संशोधन भएका वा संशोधन भई हटाइएका वा थप गरी संशोधन भई कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको सामूहिक परीक्षण र अन्तरवार्तामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागु मिति : २०८१।११।०८ गते देखि

प्रदेश लोक सेवा आयोग  
सुदूरपश्चिम प्रदेश  
प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तरगत कृषि सेवा, एगू. इन्जिनियरिङ समूह, सातौं तह, कृषि इन्जिनियर वा  
सो सरह पदको खुला, अन्तर तह र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम  
प्रथम चरण : लिखित परीक्षा (Written Examination)  
प्रथम पत्र : खण्ड (क)  
**General Awareness & General Reasoning Test (50 Marks)**

**1. General Awareness and Contemporary Issues**

**(30 Marks)**

- 1.1. Physical, socio-cultural and economic geography and demography of Nepal
- 1.2. Major natural resources of Nepal
- 1.3. Geographical diversity, climatic conditions, livelihood & lifestyle of people
- 1.4. Notable events and personalities, social, cultural and economic conditions in modern history of Nepal
- 1.5. National and Sudurpashchim Province Current periodic plan
- 1.6. Information on sustainable development, environment, pollution, climate change, biodiversity, science and technology
- 1.7. Nepal's international affairs and general information on the UNO, SAARC & BIMSTEC
- 1.8. The Constitution of Nepal (From Part 1 to 5 and Schedules)
- 1.9. Sudurpashchim Province Civil Service Act, 2079 & Regulation, 2081
- 1.10. Local Government Operation Act, 2074
- 1.11. Sudurpashchim Province Good Government Act, 2075
- 1.12. Governance system and Government (Federal, Provincial and Local)
- 1.13. Functional scope of public services
- 1.14. Public Service Charter
- 1.15. Concept, objective and importance of public policy
- 1.16. Fundamentals of management: planning, organizing, directing, controlling, coordinating, decision making, motivation and leadership
- 1.17. Government planning, budgeting and accounting system
- 1.18. Major events and current affairs of national and international importance

**2. General Reasoning Test**

**(20 Marks)**

**2.1. Logical Reasoning (7 Marks)**

Verbal Ability, Alphanumeric Series, Reasoning Analogies, Classification, Coding-Decoding, Order & Ranking, Distance & Directions, Analytical and Logical Reasoning, Assertion and Reason, Statement and Conclusion, Input/output, Venn- diagram

**2.2. Numerical Reasoning (7 Marks)**

Arithmetic Series, Analogy, Classification, Arithmetical Reasoning, Fraction. Percentage, Ratio, Average, Profit & Loss, Time & Work, Date & Calendar, Data Sufficiency, Data Interpretation & Data Verification

**2.3. Spatial Reasoning (6 Marks)**

Figure Series, Figure Analogy, Figure Classification, Figure Matrix, Pattern Completion, Embedded Images, Image Formation & Analysis, Mirror and Water Images, Cubes and Dices, Paper Folding & Cutting

प्रदेश लोक सेवा आयोग

सुदूरपश्चिम प्रदेश

प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तरगत कृषि सेवा, एगू. इन्जिनियरिङ समूह, सातौं तह, कृषि इन्जिनियर वा सो सरह पदको खुला, अन्तर तह र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

प्रथम पत्र : खण्ड (ख)

**General Technical Subject (50 Marks)**

**1 General Agriculture**

**(5 Marks)**

- 1.1 Principles of agronomy (cereals, cash crops, pulses and oilseed)
- 1.2 Agro meteorological data recording, collection and analysis and introduction to Sunshine recorder, max and min temperature, wind vane, rain gauges, soil temperature and evaporation pan etc.)
- 1.3 Introduction to sociology and rural development of Sudurpaschim Province.
- 1.4 Elements of soil science (soil fertility, properties and classification)
- 1.5 Introduction to plant protection (Emphasis on equipment)
- 1.6 Elements of farm management
- 1.7 Introduction to horticulture (fruits and vegetables)

**2 General Engineering**

**2.1 Mechanical Engineering**

**(10 Marks)**

- 2.1.1 Work, power and energy
- 2.1.2 Basic knowledge workshop technology and metallurgy
- 2.1.3 Fluid Mechanics (compressible and incompressible fluids, viscosity, Bernoulli theorem, Archimedes' principle, buoyancy)
- 2.1.4 Thermodynamics (laws of thermodynamics, Carnot engine, entropy, enthalpy, Kinetic theory of gases)
- 2.1.5 Basic knowledge on thermal energy conversion, fossil fuels, Refrigerants and psychrometry
- 2.1.6 Introduction to theory of machines
- 2.1.7 Design of machines (machines related to agriculture)
- 2.1.8 Internal combustion engines (petrol and diesel engines)
- 2.1.9 Engine terminologies

**2.2 Electrical Engineering**

**(5 Marks)**

- 2.2.1 Electrical circuits and dimensions of electrical engineering in the agricultural sector.
- 2.2.2 Fundamentals of Electronics engineering in the agricultural sector.
- 2.2.3 Introduction to computer software and hardware
- 2.2.4 Basic knowledge on electric machines
- 2.2.5 Electromagnetic devices and electric power measurements

**2.3 Civil Engineering**

**(10 Marks)**

- 2.3.1 Engineering hydrology (hydrological cycle, measurement and analysis of precipitation, measurement, estimation and analysis of runoff, hydrograph)
- 2.3.2 Engineering materials (cement, brick, steel, timber, sand, stone, aggregate, paints etc.)
- 2.3.3 Strength of material/ Mechanics (torque, couple moments, moment of inertia, elasticity, impulse, centripetal and centrifugal forces, gravitational laws)
- 2.3.4 Design of structures (steel, concrete and timber)
- 2.3.5 Soil engineering (soil physics, soil mechanics and foundation)

प्रदेश लोक सेवा आयोग

सुदूरपश्चिम प्रदेश

प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तर्गत कृषि सेवा, एगू. इन्जिनियरिङ समूह, सातौं तह, कृषि इन्जिनियर वा सो सरह पदको खुला, अन्तर तह र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

- 2.3.6 Surveying (plane table, leveling with different types of equipment), topographical, contouring, job layout, etc.)
- 2.3.7 Building construction technology (brick and stone masonry, carpentry, painting, plastering, concreting roofing, floorings, damp proof course
- 2.3.8 Estimating and costing of buildings, Irrigation and other agricultural structures.
- 2.3.9 Open channel hydraulics

**3 Agricultural Engineering**

**(20 Marks)**

- 3.1 Soil water; soil moisture tension, infiltration, permeability, wilting coefficient and conductivity
- 3.2 Weirs, parshall flumes, cut throat flumes, orifice and meter gates
- 3.3 Tracer method
- 3.4 Plant water relationship, evaporation, transpiration and consumptive use, evapotranspiration (ET) estimation methods
- 3.5 Water requirements, irrigation frequencies, Irrigation efficiencies
- 3.6 Furrow irrigation, border irrigation and check basin Irrigation
- 3.7 Basic concept of efficient irrigation systems including Sprinkler and drip/trickle Irrigation
- 3.8 Type of drainage system, Surface and sub surface drainage system
- 3.9 Ground water and aquifers, hydraulics of wells
- 3.10 Water erosion (rain drop erosion, sheet erosion, rill erosion, gully erosion, stream channel erosion)
- 3.11 Human, animal, electrical and mechanical powers
- 3.12 Solar and wind power, energy from agricultural residue and animals waste including biogas,
- 3.13 Scope of agricultural mechanization in Nepal
- 3.14 Tillage requirements and draft power requirement
- 3.15 Tillage implements (traditional animal drawn plough, mold board plough, disc plough, chisel plough, rotavator, harrows)
- 3.16 Sowing methods of major crops
- 3.17 Seed drill, planters and their components
- 3.18 Power transmission system and devices (belt, chain, shaft, pulley etc.)
- 3.19 Grain drying theory
- 3.20 Grain pressure theory
- 3.21 Unit operation in seed processing
- 3.22 The Role of Engineering for climate-resilient agricultural systems.

ΩΩΩ

प्रदेश लोक सेवा आयोग  
सुदूरपश्चिम प्रदेश  
प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तरगत कृषि सेवा, एगू इन्जिनियरिङ समूह, सातौं तह, कृषि इन्जिनियर वा सो  
सरह पदको खुला, अन्तर तह र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम  
द्वितीय पत्र : Technical Subject

**Section (A) – 20 Marks**

**1. Soil and Water Engineering**

**1.1. Water Conveyance and Control**

1.1.1. Design of open channels, channel linings, drop structures and spillways, water control and division structures

1.1.2. Design of underground pipe conveyance system

**1.2. Land Development**

1.2.1. Land leveling- grading design methods, estimation of earthwork quantities, leveling and grading procedures, equipment for land grading and field layout

**1.3. Ground Water, Irrigation Wells and Pumps**

1.3.1. Design of wells

1.3.2. Wells construction procedures

1.3.3. Indigenous water lifting devices, positive displacement pumps, centrifugal pumps, vertical turbine pumps, submersible pumps, propeller and mixed flow pumps, selection of pumps and their performances, repaired and maintenance

**1.4. Water erosion and control measures**

1.4.1. Soil losses and its measurement

1.4.2. Erosion control measures (engineering and bioengineering methods)

1.4.3. Conservation structures, watershed management and water harvesting techniques

**Section B– 30 Marks**

**2. Farm power and Machinery**

**2.1. Farm Tractor and its operation, repair and maintenance**

2.1.1. Farm tractor types

2.1.2. Different parts and components of farm tractor

**2.2. Tillage and tillage implements**

2.2.1. Minimum and zero tillage implements

2.2.2. Testing and selection of tillage implements

2.2.3. Operation and maintenance of tillage implements

**2.3. Seeding, harvesting and threshing machineries**

2.3.1. Rice trans-planters, vertical conveyor, reaper and its components, combine harvester, different type of threshers (rice thresher, multi-crop thresher and winnowing machine) with their repair and maintenance

**2.4. Mechanical weeding and chemical application equipment**

2.4.1. Manual and power weeders, sprayers (its types, components, nozzle types, application), dusters, with their operation, maintenance and selections of mechanical weeding and chemical application equipment

प्रदेश लोक सेवा आयोग  
सुदूरपश्चिम प्रदेश  
प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तरगत कृषि सेवा, एगू इन्जिनियरिङ समूह, सातौं तह, कृषि इन्जिनियर वा सो  
सरह पदको खुला, अन्तर तह र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

**Section C– 20 Marks**

**3. Post-Harvest Engineering**

**3.1. Grain Drying**

- 3.1.1. Grain drying needs, methods and theory
- 3.1.2. Mechanical dryers (batch and continuous type), grain pressure theory

**3.2. Processing of Rice, wheat, Maize, Sugarcane, Legume and Oilseeds**

- 3.2.1. Milling, hulling, expelling
- 3.2.2. Equipments for hulling, milling, and expelling

**3.3. Preservation of Horticultural and Livestock Commodities**

- 3.3.1. Principles of cold storage design
- 3.3.2. Refrigeration and air conditioning
- 3.3.3. Seed processing equipments
- 3.3.4. Dairy machinery (heaters and coolers, pasteurization, can washer, Cream separators, butter churns, steam boilers)

**Section D– 30 Marks**

**4. Farm Structure Development**

- 4.1. Planning of farmstead, farm residence, water supply and sanitation
- 4.2. Farm road, farm fencing, farm ponds, farm irrigation and drainage

**4.3. Animal Shelters**

- 4.3.1. Dairy barn (housing requirements, stanchion and loose housing barns with equipments and accessories, milking barn, pen barn)
- 4.3.2. Poultry housing (housing requirements, types of poultry house, brooder house, poultry equipments and accessories)
- 4.3.3. Sheep and goat housing (types, housing requirements, construction material, layout, equipment and accessories in goat and sheep housing etc.)
- 4.3.4. Swine housing (types, housing requirements, construction materials, layout, equipment and accessories in swine housing)
- 4.3.5. Aqua cultural engineering.

**4.4. Storage Structures**

- 4.4.1. Fodder storage structure, feed storage structure, food grain storage structure (indigenous storage structure, bag storage structure, grain bins, modern godowns), farm machinery storage structure and farm workshop

**4.5. Farm and Rural electrification**

- 4.5.1. Power transmission and distribution, house wiring and its components
- 4.5.2. AC motor (single phase and poly phase), starters, selection of electric motors, care and maintenance of electric equipments
- 4.5.3. Micro- hydro power plants

प्रदेश लोक सेवा आयोग

सुदूरपश्चिम प्रदेश

प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तरगत कृषि सेवा, एगू इन्जिनियरिङ समूह, सातौं तह, कृषि इन्जिनियर वा सो सरह पदको खुला, अन्तर तह र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

**5. Rural Engineering**

- 5.1. Green roads
- 5.2. Water supply
- 5.3. Sanitation
- 5.4. Bio engineering measures
- 5.5. Renewable energy
- 5.6 Impact of Climate change on agriculture and irrigation systems.

ΩΩΩ

द्वितीय चरण (Second Phase) : सामूहिक परीक्षण (Group Test) र अन्तरवार्ता (Interview)

**सामूहिक परीक्षण (Group Test)**

(१० अंक)

**सामूहिक छलफल (Group Discussion)**

यस प्रयोजनको लागि गरिने परीक्षण १० पूर्णाङ्क र ३० मिनेट अवधिको हुनेछ, जुन नेता विहिन सामूहिक छलफल (Leaderless Group Discussion) को रूपमा अवलम्बन गरिने छ। दिइएको प्रश्न वा Topic का विषयमा पालैपालोसंग निर्दिष्ट समय भित्र समूह बीच छलफल गर्दै प्रत्येक उम्मेदवारले व्यक्तिगत प्रस्तुति (Individual Presentation) गर्नु पर्नेछ।

**सामूहिक छलफलमा दिइने नमुना प्रश्न वा Topic**

उदाहरणको लागि - उर्जा संकट, गरीबी निवारण, बाली बीमा, सामाजिक सुरक्षा, खाद्य सुरक्षा, प्रतिभा पलायन, स्वास्थ्य बीमा, जलवायु परिवर्तन, आरक्षण जस्ता समसामयिक विषयवस्तुहरुबाट कुनै एक Topic दिइनेछ।

**अन्तरवार्ता (Interview)**

(२५ अंक)

मौखिक (Oral)

ΩΩ THE END ΩΩ