

प्रदेश लोक सेवा आयोग, प्रदेश नं. २  
 कृषि सेवा, बागवानी (हर्टिकल्चर) समूह, अधिकृत नवाँ तह खुला र अन्तर सेवा प्रतियोगितात्माक लिखित  
 परीक्षाका पाठ्यक्रम

यस पाठ्यक्रमलाई दुई भागमा विभाजन गरिएको छ ।

भाग १ – लिखित परीक्षा

भाग २ – अन्तर्वार्ता

पूर्णाङ्क : २००

पूर्णाङ्क : ३०

परीक्षा योजना (Examination Scheme)

पत्र	विषय	खण्ड	प्रश्न संख्या	अङ्क भार	परीक्षा प्रणाली	समय	पूर्णाङ्क	उत्तीर्णाङ्क
प्रथम	प्रशासन र व्यवस्थापन र सेवा सम्बन्धी सामान्य विषय	(क) प्रशासन र व्यवस्थापन	१०	१०×५=५०	छोटो उत्तर	१.३० घण्टा	५०	४०
		(ख) सेवा सम्बन्धी सामान्य विषय	५	५×१०=५०	लामो उत्तर	१.३० घण्टा	५०	
द्वितीय	सेवा सम्बन्धी प्राविधिक विषय		४	४×१५=६०	विश्लेषणात्मक समीक्षा	३ घण्टा	१००	४०
			२	२×२०=४०	विश्लेषणात्मक र समाधानमूलक उत्तर			

- प्रथम पत्र खण्ड (क) को लागि एउटा मात्र उत्तरपुस्तिका हुनेछ भने प्रथम पत्र खण्ड (ख) र द्वितीय पत्रका प्रत्येक प्रश्नका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरु हुनेछन् ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- यथासम्भव प्रश्नहरु नेपालको सन्दर्भमा सोधिने छन् ।
- समस्या समाधानका उत्तर आवश्यकता अनुसार निम्नानुसार चार भागमा विभाजन गरी प्रस्तुत गर्नुपर्नेछ ।
  - पहिलो भागमा समस्याका पहिचान ।
  - दोस्रो भागमा समस्या समाधानका लागि मौजुदा सरकारी नीति र कार्यक्रम ।
  - तेस्रो भागमा समस्या समाधानका लागि सुझाव ।
  - चौथो भागमा सुझाव कार्यान्वयन, अनुगमन र मूल्याङ्कन गर्ने ठोस तरिका ।
- यस पाठ्यक्रममा जेसुकै लेखिएको भएतापनि पाठ्यक्रममा परेका ऐन, नियमहरु परीक्षाका मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेका सम्भन्नु पर्दछ ।
- पाठ्यक्रम लागु मिति : २०७८/०९/२३ गते देखि ।

१. राज्य र सरकार
  - १.१ व्यवस्थापिका, कार्यपालिका र न्यायपालिका वीचको अन्तरसम्बन्ध
  - १.२ सार्वजनिक नीति तर्जुमा, कार्यान्वयन, अनुगमन र मूल्यांकन
  - १.३ विद्यमान नेपालको संविधान
  - १.४ संघ, प्रदेश र स्थानिय तह वीचको अन्तरसम्बन्ध र समन्वय
२. सार्वजनिक प्रशासन
  - २.१ सार्वजनिक प्रशासनको अवधारणा
  - २.२ कर्मचारी प्रशासनका आधारभूत पक्षहरु
  - २.३ आर्थिक प्रशासन- बजेट तर्जुमा, कार्यान्वयन, अनुगमन र मूल्यांकन
३. व्यवस्थापन
  - ३.१ व्यवस्थापनको अवधारणा
  - ३.२ व्यवस्थापनमा नेतृत्व, उत्प्रेरणा, नियन्त्रण र समन्वयको महत्व
  - ३.३ व्यवस्थापन सूचना प्रणाली
४. विकासका आयामहरु
  - ४.१ विकास प्रशासनका अवधारणा
  - ४.२ विकासमा जनसहभागिता
  - ४.३ आवधिक योजना
  - ४.४ दिगा विकास
  - ४.५ विकेन्द्रीकरण
  - ४.६ गरीबी निवारण
  - ४.७ सुशासन
  - ४.८ विकासमा गैरसरकारी संस्थाको भूमिका
  - ४.९ जनसंख्या र बसाईसराई
५. लोकतन्त्र र मानव अधिकार
  - ५.१ लोकतन्त्र र समावेशीकरण
  - ५.२ कानुनी राज्य
  - ५.३ मानव अधिकार
  - ५.४ लैंगिक सवाल (Gender Issues)
  - ५.५ आरक्षण र सकारात्मक विभेद
  - ५.६ प्रतिनिधित्वको सिद्धान्त र समानुपातिक प्रतिनिधित्व
  - ५.७ निर्वाचन प्रणाली, निर्वाचन चक्र, निर्वाचन व्यवस्थापन
६. नेपाली समाज र यस्को बनोट
  - ६.१ नेपालका विविध जात/जाति/वर्ग/समुदायहरुको सामाजिक, आर्थिक, सांस्कृतिक र धार्मिक अवस्था र रहनसहन
  - ६.२ आदिवासी, जनजाती, मधेशी, दलित, अपाङ्ग र महिलाहरुको वर्तमान अवस्था, उत्थानका प्रयासहरु, समस्या, समाधान र सम्भावनाहरु

## 1 Horticulture policy and strategy

- 1.1 History, objective, role, impact, importance, scope and activities of horticultural research and development plan and programs in Nepal
- 1.2 Review of limitations and achievements of Horticulture Development in Nepal.
- 1.3 National and international linkages for horticultural research and development
- 1.4 Prioritization of horticultural crops for research and development in Nepalese context
- 1.5 Present situation and distribution of major Fruits, Vegetables, Spices, plantation crops and Ornamental plants in Nepal
- 1.6 Horticulture Extension and Training Program
- 1.7 Major constraints to horticultural crop production in Nepal and possible remedies
- 1.8 Prospects of horticultural crop production in Nepal
- 1.9 Horticultural Project Planning and Management
- 1.10 Concept of pocket-package programme, satellite farming and commercial farming
- 1.11 Role of horticulture in poverty alleviation, food security, environment protection and income generation in Nepal

## 2 Acts and Policies (Relevant Sections Only)

- 2.1 Nepal Agriculture Perspective Plan (APP), 2050
- 2.2 Current Periodical Plan with special reference to horticulture
- 2.3 National Horticulture Policy, 2061
- 2.4 Horticulture Master Plan, 2047
- 2.5 Agro-diversity Policy 2063
- 2.6 Agri-Business Promotion Policy, 2063
- 2.7 National Coffee Policy
- 2.8 National Tea Policy
- 2.9 National Fertilizer Policy, 2058
- 2.10 Present Constitution of Nepal
- 2.11 Food Act, 2023
- 2.12 Seed Act, 2045
- 2.13 NARC Act, 2048
- 2.14 Civil Service Act, 2049
- 2.15 Civil Service Regulation, 2050
- 2.16 Local Governance Act, 2055
- 2.17 Nepal Agriculture Services Regulations, 2050
- 2.18 Financial Regulation, 2064
- 2.19 Plant Protection Act, 2064
- 2.20 Province no2, Province Public Service commission Act, 2076 & Regulation, 2078
- 2.21 Province No.2, Province Government, Agriculture Related Act, Rule & Regulations
- 2.22 Local Government Operation Act, 2074

## 3 General Horticulture

- 3.1 Existing horticultural crop production zones and potential areas of the country
- 3.2 Present horticultural crops production, supply, demand, export and import situation in Nepal

- 3.3 Scope and limitations of floriculture development in Nepal
- 3.4 Bio-diversity and its protection
- 3.5 Farmer's cooperative and women's participation in horticulture
- 3.6 Province No.2, Horticultures Infrastructure and Statistics
- 3.6 Horticultural farm management system in Nepal
- 3.7 Existing horticultural farms/stations and their use in Nepal

#### **4 Special topics with reference to horticulture**

- 4.1 GATT
- 4.2 SAFTA
- 4.3 TRIPP
- 4.4 Intellectual Property Right (IPR)
- 4.5 Patent Right
- 4.6 World Trade Organization (WTO) - general
- 4.7 Role of private sector in horticulture development
- 4.8 UPOV
- 4.9 Sue generics

#### **5. Scope and importance of high value horticultural crops and variety releasing system**

- 5.1 Elements of horticultural commodities
- 5.2 Value chain approach
- 5.3 Crop varietal selection processes – a) conventional and b) participatory
- 5.4. Varietal releasing system in Nepal

- समाप्त -

## 1. Fruit orchard establishment and management

- 1.1 Climatic requirements
- 1.2 Site selection, land preparation, lay-out, planting methods
- 1.3 Water management
- 1.4 Training and pruning
- 1.5 Top working
- 1.6 Weed management
- 1.7 Soils, manure and fertilizer management
- 1.8 Meadow orchard system
- 1.9 High density planting

## 2 Production packages of major fruits, vegetables, spices, plantation crops and ornamentals

relating to classification, location, altitude, aspect, soil, climate, seed, open pollinated and hybrid cultivar, sowing/transplanting time, grafting, spacing, irrigation, drainage, manure, fertilizer micro-nutrients, mulching, major varieties, insect pests, diseases, harvesting time, mix-cropping on production and productivity.

- 2.1. **Major fruit crops** (mandarin, sweet orange, lime, lemon, aonla, apple, pear, walnut, mango, litchi, banana, pine apple, grape, papaya, strawberry, olive, almond, coconut, and arecanut),
- 2.2. **Major vegetables** (potato, sweet potato, tomato, brinjal, chilly pepper, sweet pepper, cauliflower, cabbage, broccoli, pea, radish, carrot, onion, garlic, cucumber, broad-leaf mustard, lettuce and guards)
- 2.3. **Major spices** (ginger, large cardamom, turmeric and cumin)
- 2.4. **Major ornamental plants** (orchid, rose, marigold, petunia, bougainvillea, dahlia, chrysanthemum and gladiolus)
- 2.5. **Major plantation crops** (tea and coffee)

## 3 Crop physiology

- 3.1 Photosynthesis and respiration
- 3.2 Transpiration and translocation
- 3.3 Photoperiodism
- 3.4 Stress physiology
- 3.5 Plant growth regulators and retardant
- 3.6 Vernalization
- 3.7 Growth and development
- 3.8 Diffusion and osmosis
- 3.9 Flowering and fruiting phenomenon

## 4 Special topics in horticulture

- 4.1 Self unfruitfulness
- 4.2 Fruit drop
- 4.3 Citrus decline
- 4.4 Alternate bearing
- 4.5 Heterosis and development of hybrid variety
- 4.6 Genetic erosion and transformation
- 4.7 Parthenogenesis
- 4.8 High density plantation
- 4.9 Tree structure and canopy

- 4.10 Landscaping
- 4.11 Urban and peri-urban horticulture
- 4.12 Role and importance of medicinal plants in Nepal
- 4.13 Controlled cultivation
- 4.14 Integrated crop management (ICM) – IPM, IDM, IPNS
- 4.15 Organic farming
- 4.16 Hydroponics/aeroponics

## 5 Off-season Production

- 6.1 Present status, constraints and potentiality
- 6.2 Utilization of diverse agro-climatic zones for off-season production
- 6.3 Suitable crops, varieties and time for off-season production.
- 6.4 Protected cultivation: Green house, lath house, plastic culture, hot beds and cold frame.
- 6.5 Improved cultural and management technologies for off-season production.
- 6.6 Cost and benefits of off-season production.
- 6.7 Marketing strategies for off-season production.

## 6 Seed and planting materials production

- 6.1 Nursery management of fruits, vegetables, spices and ornamental plants
- 6.2 Plant propagation methods
- 6.3 Root stocks and their use in fruit cultivation with their compatibility & effect
- 6.4 Nursery media
- 6.5 Scion use, compatibility and effects on rootstock
- 6.6 Rootstock and its compatibility
- 6.7 Influence of location, aspects, altitude, temperature, light, day-length, spacing, irrigation, manure, fertilizers, micro nutrients, hormone, direct seedling, stickling-transplanting, seedling and planting time on seed yield and seed/sapling quality.
- 6.8 Nucleus, breeder, foundation and improved seed production.
- 6.9 Pollination, fertilization, seed development, dormancy and germination.
- 6.10 Variety maintenance methods.
- 6.11 Seed testing, certification and field inspection.
- 6.12 Seed production methods for open pollinated and hybrid cultivars.
- 6.13 Effects of harvesting time, threshing, drying, grading, packing, packaging and storage of horticultural commodities.
- 6.14 Major problems and weaknesses in seed/saplings production.

## 7 Post-harvest technology

- 7.1 Post harvest technology; respiration and transpiration.
- 7.2 Maturity indices
- 7.3 Method of harvesting, cleaning, grading, and packaging.
- 7.4 Post harvest handling and transportation.
- 7.5 Harvesting for local and distant markets.
- 7.6 Markets and marketing
- 7.7 Storage (cellar store, rustic store, controlled atmospheric storage, diffused light storage, zero energy and cold storage)
- 7.8 Causes of deterioration of horticultural products.
- 7.9 Quality standardizations.
- 7.10 Processing and preservation.

**8 Indigenous Technology**

- 8.1 Local and wild edible fruits and vegetable species, cultivars and their usefulness.
- 8.2 Indigenous practices of vegetable cultivation.
- 8.3 Indigenous methods of disease and pest control and preventive measure.
- 8.4 Indigenous methods of soil fertility improvement and management.
- 8.5 Indigenous methods and management of water conservation and utilization.

**9 Plant genetics and crop improvement**

- 9.1 Tissue culture technology and bio-technology
- 9.2 Superior hybrid and superior open pollinated cultivars
- 9.3 Use of transgenic plants in horticulture
- 9.4 GMOs
- 9.5 Genes and their action
- 11.2 Genotypes and phenotype.
- 9.6 Breeding methods: self-pollinated species, cross-pollinated species,
- 9.7 Concept of heterosis and development of hybrid variety.
- 9.8 Mutation breeding.
- 9.9 Genetic erosion and transformation.
- 9.10 Temperature stress, moisture stress and nutrient stress

**10. Statistics**

- 10.1.1 Basic statistics: Standard deviation, standard error, normal distribution, sampling theory, test of hypothesis, and confidence interval, T-test, F-test and Chi-square tests
- 10.2 Research problem identification and project prioritization
- 10.3 Research and development project proposal preparation
- 10.4 Designs of experiment (single factor and factorial)
- 10.5 General methodologies to carry out RRA, PRA, Action research, Adoptive research, Exploratory, Academic research, Multi-disciplinary research, Multi-location research, Outreach research, Farmers' participatory research, Socioeconomic and market research, Collaborative research and Multi-partnership research.
- 10.6 Sampling methods, sampling size, data analysis, technical report writing and presentation
- 10.7 Estimate of experimental error and Control of error
- 10.8 Comparison: Pair comparison by Least Significant Different (LSD) and Duncan's Multiple Range Test (DMRT) group comparison - between - group comparison. Within group comparison, trends comparison and factorial comparison.
- 10.9 Regression and correlation: (Simple linear regression and correlation, multiple-liner regression and correction, simple non-liner regression and correlation, multiple nonlinear regression)

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