प्रदेश लोक सेवा आयोग

कोशी प्रदेश, विराटनगर, नेपाल

प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तर्गतका प्राविधिक तर्फ कृषि सेवा, लाइभस्टक, पोल्ट्री एण्ड डेरी डेभलपमेन्ट समूह, अधिकृतस्तर सातौं तहको पदको खुला, अन्तर स्थानीय तह तथा अन्तर तह प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

पाठ्यक्रमलाई निम्नानुसार विभाजन गरिएको छ :

परीक्षाको चरण	परीक्षाको किसिम	पूर्णाङ्क
प्रथम	लिखित परीक्षा	२००
अन्तिम	सामूहिक परीक्षण र अन्तर्वार्ता	४०

परीक्षा योजना (Examination Scheme)

१. प्रथम चरण (First Phase)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या X अङ्क	समय
प्रथम	सामान्य विषय	१००	४०	वस्तुगत: बहुवैकल्पिक प्रश्न (MCQs)	१०० प्रश्न X १ अङ्क	१ घण्टा ३० मिनेट
द्वितीय	सेवा सम्बन्धी विषय	१००	४०	विषयगत (Subjective)	१० प्रश्न X १० = १००	३ घण्टा

२. अन्तिम चरण:- सामूहिक परीक्षण र अन्तर्वार्ता (Group Test & Interview)

विषय	पूर्णाङ्क	परीक्षण प्रणाली	समय
सामूहिक परीक्षण (Group Test)	१०	सामूहिक छलफल (Group Discussion)	३० मिनेट
व्यक्तिगत अन्तर्वार्ता (Individual Interview)	३०	मौखिक (Oral)	-

द्रष्टव्य:-

१. यो पाठ्यक्रम योजनालाई **प्रथम चरण (लिखित परीक्षा) तथा अन्तिम चरण (सामूहिक परीक्षण र अन्तर्वार्ता)** गरी दुई भागमा विभाजन गरिएको छ।

२. **प्रश्न पत्र अंग्रेजी वा नेपाली भाषामा हुनेछ।**

३. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ।

४. वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिने छ। तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन।

५. परीक्षा हलमा मोबाइल फ़ोन, स्मार्ट वाच, हेडफ़ोन वा यस्तै प्रकारका विद्युतीय उपकरण, पुस्तक, नोटबुक, झोला लगायतका वस्तुहरू लैजान पाईने छैन ।

६. विषयगत प्रश्नका लागि तोकिएका अङ्कका हकमा एउटा लामो प्रश्न वा एउटै प्रश्नका दुई वा दुईभन्दा बढी भाग (Two or more parts of a single question) वा एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरू (Short notes) सोध्न सकिनेछ।

७. परीक्षामा सोधिने प्रश्न संख्या, अङ्क र अङ्कभार यथासम्भव सम्बन्धित पत्र/विषयमा दिइए अनुसार हुनेछ।

८. द्वितीय पत्र (विषयगत प्रश्न हुने पत्र) का हकमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन्। परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डको उत्तर पुस्तिकामा लेख्नु पर्नेछ।

९. प्रथम र द्वितीय पत्रका पाठ्यक्रमका एकाईहरुबाट सोधिने प्रश्नहरुको अङ्क भार र संख्या देहाय अनुसार हुनेछः

प्रथम पत्रका ईकाई	**१**	**२**	**३**	**४**	**५**	**६**	**७**	**८**	**जम्मा**
प्रश्न संख्या	१०	२०	२०	१०	१०	१३	१२	५	**१००**
द्वितीय पत्रका खण्ड	**A**		**B**		**C**		**D**		
अङ्क भार	२०		२०		३०		३०		**१००**

१०. यस पाठ्यक्रम योजना अन्तर्गतका पत्र/ विषयका विषयवस्तुमा जेसुकै लेखिएको भएतापनि पाठ्यक्रममा परेका कानुन, ऐन, नियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भइ हटाइएका वा थप गरी संशोधन भएका) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ।

११. प्रथम चरणको लिखित परीक्षामा छनौट भएका उम्मेदवारहरूलाई मात्र अन्तिम चरणको सामूहिक परीक्षण र अन्तर्वार्तामा सम्मिलित गराइने छ।

१२. प्रथम चरणको लिखित परीक्षा र अन्तिम चरणको सामूहिक परीक्षण र अन्तर्वार्ताको कूल अङ्क योगका आधारमा अन्तिम परीक्षाफल प्रकाशित गरिनेछ।

१३. पाठ्यक्रम लागू हुने मितिः- **२०८०/०२/३२**

प्रदेश लोक सेवा आयोग

कोशी प्रदेश, विराटनगर, नेपाल

प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तर्गतका प्राविधिक तर्फ कृषि सेवा, लाइभस्टक, पोल्ट्री एण्ड डेरी डेभलपमेन्ट समूह, अधिकृतस्तर सातौं तहको पदको खुला, अन्तर स्थानीय तह तथा अन्तर तह प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

प्रथम पत्र (Paper I): सामान्य विषय (General Subject)

1. नेपालको संविधान तथा सान्दर्भिक कानूनहरुः

1.1 नेपालको संविधान

1.2 सार्वजनिक खरिद ऐन २०६३ र नियमावली २०६४

1.3 स्थानीय सरकार संचालन ऐन २०७४

1.4 प्रदेश सुशासन (व्यवस्थापन तथा संचालन) ऐन २०७६ तथा नियमावली २०७९

1.5 प्रदेश आर्थिक कार्यविधि तथा वित्तीय उत्तरदायित्व ऐन, २०७८

1.6 संघ, प्रदेश तथा स्थानीय तह (समन्वय तथा अन्तरसम्बन्ध) ऐन, २०७७

1.7 संघ, प्रदेश र स्थानीय तहका कर्मचारीको सेवाका शर्त सम्बन्धी कानुनहरु

1.8 भष्टाचार निवारण ऐन, २०७९

1.9 प्रदेश कृषि ब्यवसाय प्रवर्धन अनुदान ऐन, २०७७

2. General Awareness and Contemporary Issues

2.1 Physical, socio-cultural and economic geography and demography of Nepal

2.2 Major natural resources of Nepal

2.3 Geographical diversity, climatic conditions, and livelihood & lifestyle of people

2.4 Current periodic plans of Nepal and Koshi Province

2.5 Information on sustainable development, environment, pollution, climate change, biodiversity, science and technology, Sustainable Development Goals

2.6 Governance system and Government (Federal, Provincial and Local)

2.7 Functions and scope of public services.

2.8 Concept, objective and importance of public policy

2.9 Fundamentals of management: planning, organizing, directing, controlling, coordinating, decision making, motivation and leadership

2.10 Government planning, budgeting, MTEF and accounting system

3. Livestock development and related plans, policies and acts

3.1 Livestock statistics of Nepal and Koshi Province

3.2 Livestock sector in Agricultural Perspective Plan (APP), Agriculture Development Strategy (2015-2035 AD)

3.3 Animal Health and Livestock Services Act, 2055 and it's regulation, 2056

3.4 Animal Slaughterhouse and Meat Inspection act, 2055 and it's regulation, 2057

3.5 Poultry Policy, 2068; Rangeland Policy,2068; Feed Act, 2033 and it's regulation, 2035; National Agriculture Policy, 2061; Agribusiness Promotion Policy, 2063; Livestock Insurance Policy, 2049 and other livestock related policies

3.6 Animal transportation standard, 2064

3.7 National Animal Breeding Policy 2078

3.8 National Agro-biodiversity Policy 2063

3.9 National Dairy Development Policy 2078

3.10 National Fisheries Development Policy 2079

3.11 National Food Safety Policy 2076

3.12 Food Security & Food Sovereignty Act 2076

3.13 पशु स्वास्थ्य तथा पशु सेवा व्यवसायी परिषद् ऐन, २०७९

3.14 Livestock related provincial periodic plans, policy, programs and projects

3.15 Organizational structure of agricultural service in federal context

4. Animal Nutrition

4.1 Functions of water, proteins, fats, carbohydrates, minerals and vitamins in animal body and their requirements for different species of livestock and poultry - their sources and deficiency syndromes

4.2 Intake, digestion, utilization and metabolism of various nutrients by ruminants and non-ruminants

4.3 Evaluation of animal feed quality

4.4 Factors affecting nutritive value of feed stuffs

4.5 Feed additives-antioxidants, antibiotics, probiotics, antifungal, coccidiostat and growth promoters etc.

4.6 Utilization of crop and industrial by-products in poultry and livestock

4.7 Feeds and feeding standards for each livestock and poultry species at different stages

5. Pasture and Fodder

5.1 Morphology of pasture and fodder species

5.2 Classification of pasture and fodder species

5.3 Agronomical management of tropical, sub-tropical and temperate species of grasses and legumes such as stylo, berseem, oat, rye grass, soybean, sorghum, Para grass, broom grass, Centro, Napier, desmodium, vetch, clover, teosinte, molasses, cowpea, velvet bean, kudzu, etc.

5.4 Nursery management of fodder tree species

5.5 Agronomical management of fodder trees such as *Badahar, Kutmiro, Tanki, Koiralo, Khannyo, Kimbu, Kabro, Pakhuri, Dabdabe, Bakaino* etc.

5.6 Different methods of forage conservation- hay, silage and their nutritive values

5.7 Agro-forestry/Silvi-pasture in community and leasehold forestry

5.8 Anti-nutritional factors present in feeds and fodder/forages

5.9 Principles and practices of forage seed production

5.10 Seed (foundation and certified) production of different pasture and fodder species including fodder trees in different eco-zones

5.11 Seed quality control system and quality testing of forage and fodder seed

6. Animal Breeding and Reproduction

6.1 The cell and cell division

6.2 Segregation and recombination of genes

6.3 Expression of genes: additive and non-additive gene action; causes of variation in gene expression

6.4 Heritability and repeatability estimates

6.5 Breeding values, measure of genetic and phenotypic relationships

6.6 Selection: method of selection, principles of selection, selection differential, selection response, selection intensity, generation interval, phenotypic, genetic and environmental correlation and genetic progress

6.7 Indigenous and exotic breeds of livestock and poultry and their characteristics

6.8 Conservation and utilization of animal genetic resources at national and provincial level

6.9 System of breeding: inbreeding, close inbreeding, line inbreeding, outbreeding, outcrossing, crossbreeding, grading up, species hybridization

6.10 Anatomy and function/physiology of male and female reproductive organs of different species of livestock and poultry

6.11 Hormones of reproduction and their functions; estrous cycle, ovulation, fertilization, gestation and parturition; estrus synchronization, embryo transfer

6.12 Reproductive disorders and their corrective measures

7. Livestock and Poultry Management

7.1 Husbandry

7.1.1 Housing and space requirement of different livestock and poultry

7.1.2 Different types of record maintenance of farm animals and poultry

7.1.3 Management of different stages of animal (young, pregnant, lactating, dry animals, breeding stock etc.)

7.1.4 Management of livestock and poultry breeding stocks

7.1.5 Hatchery management – factors influencing hatchability

7.1.6 Care and management of broilers

7.1.7 Care and management of layers

7.1.8 Hygienic milk production

7.1.9 Good husbandry practice

7.2 Animal Health

7.2.1 Sanitation and prophylactic measures

7.2.2 Biosecurity

7.2.3 External and internal parasites - their control measures

7.2.4 Symptoms, prevention and control measures of common livestock and poultry diseases: Calf scour, Mastitis, Hemorrhagic septicemia, Foot and mouth disease, Calf pneumonia, Bloat, Peste des petits ruminants, Black quarter, Enterotoxaemia, Foot rot, Pox, Swine fever (Classical & African), Ranikhet, Marek's Disease, Gumboro, Chronic respiratory disease, Avian influenza, Lumpy skin disease, Porcine respiratory and reproductive syndrome etc.

7.2.5 Zoonotic diseases and their importance to public health

7.2.6 Metabolic diseases

7.2.7 Concept and strategies of one health

7.2.8 Animal welfare

7.2.9 World organization for animal health (WOAH), its objectives, structure, function, Terrestrial Animal health code, Aquatic animal health code

8 Dairy

8.1 Milk secretion phenomenon

8.2 Composition of milk of different livestock species

8.3 Factor affecting the composition of milk and milk quality

8.4 Nutritive value of milk and milk products

8.5 Physical and chemical properties of milk

8.6 Pasteurization and homogenization of milk

8.7 Legal standard of different milk and milk products in Nepal

8.8 Food safety and ISO 22000:2005

नमूना प्रश्न (Model Questions)

1. When was the National Dairy Development policy implemented?
   a) 2064 B.S. b) 2065 B.S.
   c) 2078 B.S. d) 2074 B.S.
2. What is the anti-nutritional factor present in Ipil-Ipil fodder?
   a) Tanin b) Saponin c) Mimosine d) Leucine
3. In animals, Grass tetany is caused due to deficiency of
   (a) Silicon (b) Sodium
   (c) Magnesium (d) Selenium
4. What is the current status milk production in Koshi Province of fiscal year 2078/79?
   a) 462 Th. MT b) 525 Th. MT c) 625 Th. MT d) 425 Th. MT
5. Average water content in cow milk is
   a) 87% b) 85%
   c) 83% d) 82%

प्रदेश लोक सेवा आयोग

कोशी प्रदेश, विराटनगर, नेपाल

प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तर्गतका प्राविधिक तर्फ कृषि सेवा, लाइभस्टक, पोल्ट्री एण्ड डेरी डेभलपमेन्ट समूह, अधिकृतस्तर सातौं तहको पदको खुला, अन्तर स्थानीय तह तथा अन्तर तह प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

द्वितीय पत्र (Paper II) : सेवा सम्बन्धी (Technical Subject)

Section A– 20 Marks

1. Animal Nutrition

1.1 Current situation of feed and nutrition in livestock sector at national and provincial level
1.2 Conventional and non-conventional feeds
1.3 Nutritional contents of different species of pasture, fodder, fodder trees including indigenous species, agricultural and industrial by-products
1.4 Anti-nutritional factors in feeds and fodders
1.5 Different methods of nutritional analysis of livestock feeds and fodder
1.6 Computation and evaluation of ration for different livestock and poultry species
1.7 Utilization of wastes in animal feeding
1.8 New advancement in animal feed and nutrition

Section B– 20 Marks

2. Pasture And Fodder

2.1 Soil fertility evaluation- soil testing, plant analysis, deficiency symptoms and biological test in relation to pasture and fodder species
2.2 Soil organic matter and organic manure in relation to pasture and fodder species
2.3 Agronomical management of tropical, sub-tropical and temperate species of grasses and legumes such as stylo, lucerne, berseem, oat, rye grass, soybean, sorghum, paragrass, broom grass, centro, napier, desmodium, vetch, clover, teosinte, molasses, cowpea, velvet bean and kudzu etc.
2.4 Agronomical management of fodder trees such as *Badahar, Kutmiro, Tanki, Epil-epil, Khanayo, Kimbu, Kabro, Pakhuri, Dabdabe, Bakaino,* Flemingia species, Gliricidia species, etc.
2.5 Pasture and rangeland management practices in different eco-zones, effects of climate change on production and productivity of pastureland
2.6 Different methods of forage conservation- hay, silage and their nutritive values
2.7 Utilization of crop residues- improvement of nutritive values
2.8 Agro-forestry / Silvi-pasture in community and leasehold forestry
2.9 Principles and practices of forage seed production
2.10 Seed (foundation and certified) production of different pasture and fodder species including fodder trees in different eco-zones
2.11 Seed quality control system and quality testing of forage and fodder seed

Section C– 30 Marks

3. Animal Breeding and Reproduction

3.1 Concept of genetic resistance to diseases and parasites
3.2 Indigenous and exotic breeds of livestock and poultry and their characteristics

3.3 Selection, principle of selection, methods and basis of selection
3.4 Hormones of reproduction and their functions; estrous cycle, ovulation, fertilization, gestation and parturition; estrus synchronization
3.5 Reproductive disorders and their corrective measures
3.6 Collection, processing, evaluation and storage of warm and frozen semen
3.7 Artificial insemination technique, pregnancy diagnosis
3.8 Embryo-transfer technology in livestock development
3.9 Present status, problems and strategies for improvement of livestock breeding system in provincial and national level
3.10 Formulation of breeding plan for livestock and poultry species
3.11 Conservation and utilization of animal genetic resources at national and provincial level

4. Dairy

4.1 Composition of milk of different livestock species
4.2 Nutritive value of milk and milk products
4.3 Pasteurization and homogenization of milk
4.4 Standardization of milk, cream and other milk products
4.5 Methods of preparation of different milk products: yoghurt, butter, ghee, cheese, paneer, khuwa, ice cream and chhurpi, etc.
4.6 Microbiology of milk and milk products
4.7 Good hygienic Practices
4.8 Milk borne diseases
4.9 Packaging and storage of milk and milk products
4.10 Development and project planning of mini dairy plant
4.11 Costing of different dairy products
4.12 Schedule for maintenance of mini dairy plants
4.13 Quality standards of milk and milk products

Section D– 30 Marks

5. Livestock And Poultry Management

5.1 Husbandry

5.1.1 Functions and tools of farm management
5.1.2 Management of different stages of animal (young, pregnant, lactating, dry etc)
5.1.3 Management of livestock and poultry breeding stocks
5.1.4 Handling and utilization of livestock and poultry farm wastes
5.1.5 Hatchery management- factors influencing hatchability
5.1.6 Care and management of broilers
5.1.7 Care and management of layers (Chicks, grower, Layers)
5.1.8 Hygienic milk production
5.1.9 Good husbandry practice

5.2 Animal Health

5.2.1 Sanitation and prophylactic measures
5.2.2 Biosecurity
5.2.3 External and internal parasites - their control measures
5.2.4 Symptoms, prevention and control measures of common livestock and poultry diseases: Calf scour, Mastitis, Hemorrhagic septicemia, Foot and mouth disease, Calf pneumonia, Bloat, Peste des petits ruminants, Black quarter,

Enterotoxaemia, Foot rot, Pox, Swine fever, Ranikhet, Marek's, Gumboro, Chronic respiratory disease, Avian influenza, Lumpy skin disease, Porcine respiratory and reproductive syndrome etc.

5.2.5 Metabolic diseases

5.2.6 Zoonotic diseases and their importance to public health

5.2.7 Concept and strategies of one health

5.2.8 Animal welfare

5.2.9 World organization for animal health (WOAH), its objectives, structure, function, Terrestrial Animal health code, Aquatic animal health code

5.3 Livestock Marketing

5.3.1 Relationship between livestock production and marketing

5.3.2 Types of markets for livestock and livestock products

5.3.3 Factors affecting the livestock markets

5.3.4 Livestock market promotion and sustainable management

5.3.5 Live animal transportation and it's legal provisions

5.3.6 Economics of poultry (layers and broilers) farming

5.3.7 Economics of livestock (cattle, buffalo, goat, sheep, pig, and rabbit) farming

5.3.8 Livestock value chain

5.3.9 World Trade Organization (WTO)

5.3.10 Exportable livestock commodities of Koshi Province

नमूना प्रश्न (Model Questions)

1. What are the Indigenous breeds of different livestock in Nepal? Mention about their importance, conservation and utilization. [5+5]

2. Describe about the existing Milk value chain system in Nepal? How can we improve and regulate the milk marketing system in Nepal? [5+5]

3. What are the requirements for clean and hygienic meat production? What are the measures to be adopted for minimizing cost of production in livestock farming? [5+5]

4. What are the major problems seen currently among the pig farming industry in Nepal? Mention your suggestions. [5+5]