

कालिका नगरपालिका
नगर कार्यपालिकाको कार्यालय
रेडक्रसग्राम, चितवन

एक पालिका एक भेटेरिनरी डाक्टर, अधिकृत छैठौँ तह/पदको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छः

प्रथम चरणः– लिखित परीक्षा (Written Examination)	पूर्णाङ्कः– २००
द्वितीय चरणः– (क) सामूहिक परीक्षण (Group Test)	पूर्णाङ्कः– १०
(ख) अन्तर्वार्ता (Interview)	पूर्णाङ्कः– ३०

परीक्षा योजना (Examination Scheme)

प्रथम चरणः लिखित परीक्षा (Written Examination) पूर्णाङ्कः– २००

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्नसंख्या × अङ्क	समय
प्रथम	General Subject Part I: General Awareness & General Reasoning Test Part II: General Technical Subject	१००	४०	वस्तुगत (Objective) बहुवैकल्पिक प्रश्न (MCQs)	५० प्रश्न × १ अङ्क ५० प्रश्न × १ अङ्क	१ घण्टा ३० मिनेट
द्वितीय	Technical Subject	१००	४०	विषयगत (Subjective) छोटो उत्तर लामो उत्तर	४ प्रश्न × ५ अङ्क ८ प्रश्न × १० अङ्क	३ घण्टा

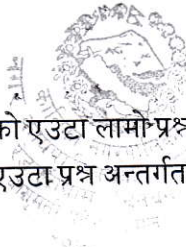
द्वितीय चरणः सामूहिक परीक्षण (Group Test) / अन्तर्वार्ता (Interview) पूर्णाङ्कः– ४०

पत्र / विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	समय
सामूहिक परीक्षण (Group Test)	१०	—	सामूहिक छलफल (Group Discussion)	३० मिनेट
अन्तर्वार्ता (Interview)	३०	—	बोर्ड अन्तर्वार्ता (Board Interview)	—

दृष्टव्यः

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- प्रथमपत्र र द्वितीयपत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्यालकुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।

Handwritten signature



5. विषयगत प्रश्नहरूको हकमा तोकिएको अङ्कको 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 ।
6. यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयको विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, 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 ।
7. प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
8. यस भन्दा अगाडि लागू भएका माथि उल्लेखित सेवा, समूहको पाठ्यक्रम खारेज गरिएको छ ।
9. पाठ्यक्रम लागू मिति: २०८३/०६/२९

afue



प्रथम पत्र (Paper I): General Subject

Part (I): General Awareness & General Ability Test (50 Marks)

1. General Awareness and Contemporary Issues (25 × 1 Mark = 25 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, and livelihood & lifestyle of people
- 1.4 Notable events and personalities, social, cultural and economic conditions in modern history of Nepal
- 1.5 Current periodical plan of Nepal
- 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 Governance system and Government (Federal, Provincial and Local)
- 1.10 Provisions of civil service act and regulation relating to constitution of civil service, organisational structure, posts of service, fulfillment of vacancy and code of conduct
- 1.11 Functional scope of public services
- 1.12 Public Service Charter
- 1.13 Concept, objective and importance of public policy
- 1.14 Fundamentals of management : planning, organizing, directing, controlling, coordinating, decision making, motivation and leadership
- 1.15 Government planning, budgeting and accounting system
- 1.16 Major events and current affairs of national and international importance

2. General Reasoning Test (25 × 1 Mark = 25 Marks)

2.1 Logical Reasoning (9 × 1 Mark = 9 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 (8 × 1 Mark = 8 Marks)

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

2.3 Spatial Reasoning (8 × 1 Mark = 8 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

Part (II): General Technical Subject (50 Marks)

1. Introduction (10%)

- 1.1 History and current status of veterinary services in Nepal
- 1.2 Current status of livestock production and production systems of livestock and poultry in Nepal
- 1.3 Indigenous and exotic breeds of livestock and poultry and their population in Nepal
- 1.4 Role of public and private sector in the promotion of veterinary services in Nepal
- 1.5 Recent HMG/N policies and plans related to livestock development

Signature

- 1.6 Provisions made by APP, Livestock Master Plan and Dairy Development Plan for Livestock sector development



2. Clinical subjects (40%)

2.1 Veterinary Medicine

- 2.1.1 Distinguish between health and disease, General clinical examinations of animals, Normal physiological values like body temperature, rectal temperature, heart rates, respiratory rates, urinary volume and fecal output of different species of animals
- 2.1.2 Systemic disease: Etiology, diagnosis and treatment of: Disease of Blood, lymphatic and cardiovascular system, Disease of Digestive system, Common disease of eye and ear, Disease of Endocrine system, Disease of Nervous system, Disease of Reproductive and urinary system, Disease of Respiratory system, Disease of Skin
- 2.1.3 Metabolic and production diseases
- 2.1.4 Nutritional deficiencies disease
- 2.1.5 Trans-boundary animal disease (TADs): Definition, etiology, epidemiology, transmission, pathogenesis, symptoms, diagnosis, treatment, control and prevention of the following TADs: FMD; RP; PPR; CBPP; Sheep pox and Goat pox; Blue tongue; Classical swine fever; Highly Pathogenic Avian Influenza; New castle disease
- 2.1.6 Other Infectious disease: Definition, etiology, epidemiology, transmission, pathogenesis, symptoms, diagnosis, treatment, control of the following infectious disease: HS; BQ; Malignant edema; Tetanus; Anthrax; Tuberculosis; Paratuberculosis; Actinomyces; Actinobacillosis; Brucellosis; Listeriosis; Leptospirosis; Mastitis; Strangles; Glanders; Degnala disease; Salmonellosis; Mycoplasmosis; Mad cow disease; Rabies; Scrapie; Canine distemper
- 2.1.7 Etiology, epidemiology, transmission, pathogenesis, symptoms, diagnosis, treatment, and control of the common disease caused by chlymedia, Ricktesia and Fungi in different species of animals
- 2.1.8 Disease of Poultry: Definition, etiology, epidemiology, transmission, pathogenesis, symptoms, diagnosis, treatment, control of the following poultry disease: Fowl pox; Fowl Typhoid; BWD; CRD; Infectious bursal disease; Infectious bronchitis; Marek's disease; Avian leucosis complex; Egg drop syndrome; Leechy heart disease; Fowl cholera; Aflatoxicosis
- 2.1.9 Parasitic disease: Etiology, epidemiology, transmission, pathogenesis, symptoms, diagnosis, treatment, control of the following parasitic disease. Helminthic parasitic disease: LF; Paramphistomiasis; Ascariasis; G.I. Nematodiasis; Tape worm infection in different species of animals. ecto-parasitism, General control measures of Gastro intestinal parasitism in animals. Protozoan diseases: Anaplasmosis; Babesiosis; Theileriosis; Trypanosomiasis; Toxoplasmosis; and Coccidiosis
- 2.1.10 Diagnosis, treatment and management of different form of poisonings and snake bite
- 2.1.11 Prospects and constrains of animal and poultry vaccine production in Nepal, their uses and abuses

2.2 Veterinary Surgery

- 2.2.1 General surgical principles and procedures adopted in surgery
- 2.2.2 Pre and post operative considerations
- 2.2.3 Antiseptics and disinfectants
- 2.2.4 Sterilizations of surgical materials and instruments.
- 2.2.5 Importance of sutures and suturing materials
- 2.2.6 Inflammations; Abscess; Tumors; Cysts; Heamatoma; Hernia and their treatment
- 2.2.7 Different types of wounds and their treatment
- 2.2.8 Gangrene; Burn, Scald; Frost bite and their treatment
- 2.2.9 Fractures and dislocations, their diagnosis and treatment
- 2.2.10 Special surgery; Caesarian section; Rumenotomy; Ovario-histerectomy, Stringhalt; Spaying and Neutering
- 2.2.11 Different types of local, regional and general anesthetic procedures

Blue



2.3 Veterinary obstetrics and Gynecology

- 2.3.1 Normal reproductive cycle of different farm animals and dogs.
- 2.3.2 Breeding soundness examination of bull
- 2.3.3 Detection of heat
- 2.3.4 Artificial insemination
- 2.3.5 Pregnancy diagnosis
- 2.3.6 Embryo transfer
- 2.3.7 Concept of infertility and sterility
- 2.3.8 Diagnosis and treatment of silent estrus, an-estrus, repeat breeders metritis, endometritis and pyometra
- 2.3.9 Dystokia and its correction
- 2.3.10 Prolapse of uterus, bladder and vagina
- 2.3.11 Use of hormones and prostaglandins
- 2.3.12 Infectious disease causing abortions

2.4 Epidemiology and Veterinary public health

- 2.4.1 Definition, aim, objectives and application of epidemiology
- 2.4.2 Epidemiological concept of disease control
- 2.4.3 Surveillance and monitoring of disease
- 2.4.4 Different types of epidemiological studies
- 2.4.5 Outbreak investigation
- 2.4.6 Prevalence rate, incidence rate and difference between them
- 2.4.7 Characteristics of host factor, agent factor and environmental factor
- 2.4.8 Different terminology used in epidemiology
- 2.4.9 Epidemiological reporting practices in Nepal
- 2.4.10 Cost analysis of the disease control programs
- 2.4.11 Risk analysis
- 2.4.12 Definition and objective of VPH
- 2.4.13 Different roles of VPH (Animal production, food hygiene and environmental protection)
- 2.4.14 Diagnosis, surveillance and control of various zoonotic disease
- 2.4.15 Meat inspection: anti-mortem, post-mortem and re-inspection
- 2.4.16 Different component and management of slaughterhouse
- 2.4.17 Milk hygiene
- 2.4.18 Concept of HACCP (Hazard analysis and critical control point)

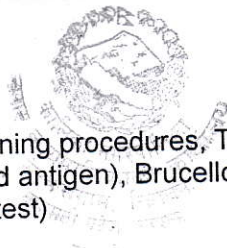
2.5 Veterinary extension

- 2.5.1 Definition, philosophy and principles of extension education
- 2.5.2 Classification of extension teaching methods
- 2.5.3 Public private partnership
- 2.5.4 Social mobilization (CBOs, NGOs, and INGOs)

2.6 Clinical pathology and parasitology

- 2.6.1 Materials to be sent to laboratory for different disease diagnosis
- 2.6.2 Hematological examinations (TC, DC, ESR, PCV, RBC count, Blood smears, hemoglobin estimation)
- 2.6.3 Blood chemistry (estimation of blood glucose, serum and calcium)
- 2.6.4 Liver and kidney functions tests
- 2.6.5 Urine analysis (Routine test, test for detection of protein, Glucose, Ketone bodies, blood, bile pigment)
- 2.6.6 Blood and urine culture and antibiotic sensitivity tests
- 2.6.7 California mastitis tests

Handwritten signature



- 2.6.8 Important diagnostic tests: Different staining procedures, Tuberculin tests in animals, Test for pullorum disease (Rapid stained antigen), Brucellosis tests (RBPT and milk ring test), Test for rabies (Negri bodies test)
- 2.6.9 Post mortem examinations
- 2.6.10 Clinical parasitology (Examination of feces: direct smear method, concentration method and Floatation method)
- 2.6.11 Examination of skin scrapping
- 2.6.12 Bacterial, Viral and Fungal serological techniques
- 2.6.13 ELISA

3. Para-clinical subjects (20%)

3.1 Veterinary Microbiology

- 3.1.1 General characteristics, properties, morphology, metabolism, growth and reproduction of bacteria, virus and fungus of various classes
- 3.1.2 Bacterial genetics, mutation and variations associated with virulence
- 3.1.3 Antigenicity, drug resistance
- 3.1.4 Principles of antiseptics, sterilization and disinfection
- 3.1.5 Resistance and immunity, antigen-antibody reaction and methods of detection. Cell mediated and humoral immunity and immune mechanism. Immune system and its development. Antigen-antibody reactions
- 3.1.6 Immunization of animals
- 3.1.7 Hypersensitivity-allergy
- 3.1.8 Bacteriophage, their description and application
- 3.1.9 Laboratory techniques for bacterial, viral, fungal culture and identification
- 3.1.10 Important diseases of domesticated animals caused by bacteria, viruses, rickettsia, chlamedia and fungi

3.2 Veterinary Parasitology

- 3.2.1 Parasites and Parasitism, Types of parasitism, host-parasite relationship
- 3.2.2 Importance of immunity against parasitic diseases
- 3.2.3 Classification and nomenclature of parasites and characteristics of different classes of parasites
- 3.2.4 Parasite development in the host system
- 3.2.5 Antiparasitic and anthelmintic medication, their use and abuse. Anthelmintic resistance
- 3.2.6 General description, classification, morphological characteristics and diseases caused by helminths, arthropods, insects and arachnida of domesticated animals and birds and their epidemiology, effects and methods of controlling them
- 3.2.7 Protozoan parasites of domesticated animals and birds, their classification, morphology and the diseases caused by them with epidemiology, effects and control strategies
- 3.2.8 Identification of different parasites and the methods of their culture and laboratory growth

3.3 Veterinary Pathology

- 3.3.1 Pathological responses of body to infection
- 3.3.2 Inflammation, classification and changes in inflammatory responses
- 3.3.3 Pathological disturbances and responses in circulatory system, cell metabolism, pigment metabolism
- 3.3.4 Disturbances in growth, Neoplasm and cancer
- 3.3.5 Healing, fever
- 3.3.6 Uroliths, choleliths, sialoliths, pancreoliths, enteroliths
- 3.3.7 Immune reactions. Hypersensitivity and auto immunity

[Handwritten signature]



- 3.3.8 Pathology of diseases of cardiovascular system, hemopoietic system, respiratory system, digestive system, urinary system, genital system, nervous system, endocrine system, sense organs and musculoskeletal system of domesticated animals and birds
- 3.3.9 Pathological changes in diseases caused by bacteria, viruses, fungus and parasites of domesticated animals and birds

3.4 Veterinary Pharmacology and Toxicology

- 3.4.1 Principles of drug activity, pharmacokinetics and pharmacodynamics of the drugs acting on central nervous system
- 3.4.2 Anesthetics, hypnotics, sedatives, tranquilizers, analgesics, analeptics, antipyretics, histamines and antihistamines
- 3.4.3 Anaesthetics, Neuromuscular blocking agents, Peripheral and Central muscle relaxants
- 3.4.4 Drugs acting on autonomic nervous system, neurohumoral transmission, adrenergic antagonists, cholinergic antagonists
- 3.4.5 Drugs acting on cardiovascular system, digestive system, respiratory system, urogenital system and skin and mucus membrane
- 3.4.6 Endocrine pharmacology
- 3.4.7 Vitamins
- 3.4.8 Antibacterial agents, antibiotics, antifungal agents, anthelmintics, antiprotozoal agents, antiviral and anticancer agents
- 3.4.9 Cytotoxic and immunosuppressive drugs
- 3.4.10 Hormones, prostaglandins, cortocosteroids
- 3.4.11 Toxicity caused by metals and non metals, plants, commonly used drugs, agrochemicals, venomous bites and stings and environmental toxicity

4. Pre-clinical subjects (16%)

4.1 Veterinary Anatomy

- 4.1.1 Gross anatomy of skeletal system, muscular system, nervous system, digestive system, urogenital system, circulatory system, respiratory system, reproductive system, glandular system and sense organs of domesticated animals and poultry
- 4.1.2 Introduction to cell structure, cell division and basic tissue of body. Histology of the organs of musculoskeletal, digestive, respiratory, urinary, reproductive, nervous, cardiovascular, endocrine, lymphoid, sense organs of domesticated animals and birds
- 4.1.3 General embryology, gametogenesis, fertilization, and development of fetus and body organs in domesticated animals and birds

4.2 Veterinary Physiology

- 4.2.1 General function and mechanism of action of various organs of circulatory, digestive, respiratory, urinary, reproductive, nervous, sensory system, endocrine system of domesticated animals and birds
- 4.2.2 Composition and function of tissue fluids
- 4.2.3 Mechanism of respiration and gaseous exchange

4.3 Biochemistry

- 4.3.1 Biochemistry of respiration, renal function and acid base balance
- 4.3.2 Biochemistry of digestion and metabolism of carbohydrate, fat, protein, nucleic acid, minerals and trace elements
- 4.3.3 Basal and energy metabolism
- 4.3.4 Biochemistry of hormones and enzymes
- 4.3.4 Diagnostic biochemistry
- 4.3.5 Immunochemistry
- 4.3.6 Biochemistry of cellular and sub cellular components
- 4.3.7 Biochemistry of carbohydrate, lipids, proteins

Apur

4.3.8 Diagnostic biochemistry

4.4 Animal Nutrition

- 4.4.1 Animal feed classification, nutritional requirements, feeding system and feeding standards of farm animals and birds
- 4.4.2 Functions of various nutrients and process of digestion in ruminants, non ruminants and birds
- 4.4.3 Ration formulation for farm livestock and birds

4.5 Livestock Production and Management

- 4.5.1 Care and management of farm livestock and poultry during different production and growth stages
- 4.5.2 Housing system for animals and birds
- 4.5.3 Characteristics of different breeds of farm livestock and birds
- 4.5.4 System of breeding and selection in farm livestock and poultry birds
- 4.5.5 Dairy and poultry production

5. Regulatory functions (14%)

- 5.1 Out line of the World Trade Organization (WTOs), Sanitary and Phytosanitary (SPS) measures
- 5.2 Technical Barrier to Trade (TBT) Trade related aspects of Intellectual Property Rights (IPRs) agreement
- 5.3 Introduction to OIE, its objectives, function, structure, Standard setting procedures and different standards as set in Terrestrial Animal health code, Aquatic animal health code
- 5.4 Different standards for Biological preparation and standard Diagnostics Tests for various diseases of farm animals
- 5.5 Role of Official Veterinary Services in International Trade of animals, products of animal origin, food safety, import risk analysis, import permit
- 5.6 International Veterinary certifications, quarantine inspections and procedures
- 5.7 Animal Health Related Acts & Regulations
 - 5.7.1 Animal Health and Livestock Service Act and Regulation
 - 5.7.2 Slaughterhouse and Meat inspection Act and Regulation
 - 5.7.3 Nepal Veterinary Council Act, 2055 and Regulation, 2057
 - 5.7.4 Feed Act and Regulation
 - 5.7.5 Drug Act, 2035
 - 5.7.6 National Park and Wildlife Conservation Act
 - 5.7.7 Nepal Standard (Certification Mark) Act
- 5.8 Legal Duties of a Veterinarian, Examinations of animals for soundness, injuries, and sudden death.
- 5.9 Animal welfare
- 5.10 Detection of Frauds, Malicious poisoning
- 5.11 Differentiation of different species of blood, serum, semen, hair, hide and bones

Spice



एक पालिका एक भेटेरिनरी डाक्टर, अधिकृत छैठौं तह/पदको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

द्वितीय पत्र (Paper II): Technical Subject

Section A – 30 Marks

1. Introduction (20%)

- 1.1 History and current status of veterinary services in Nepal
- 1.2 Current status of livestock production and production systems of livestock and poultry in Nepal
- 1.3 Indigenous and exotic breeds of livestock and poultry and their population in Nepal
- 1.4 Role of public and private sector in the promotion of veterinary services in Nepal
- 1.5 Recent GoN policies and plans related to livestock development, Provisions made by APP, Livestock Master Plan, Dairy development Plan and National Dairy Development Board for Livestock sector development

2. Planning and management of veterinary/laboratory services (10%)

- 2.1 Management of veterinary investigation laboratory
- 2.2 Planning and management of district veterinary services, livestock production services and livestock product marketing services
- 2.3 Herd health management and disease prevention
- 2.4 National disease control program
- 2.5 Planning and management of veterinary projects

Section B – 30 Marks

3. Animal health management (30%)

- 3.1 Etiology, diagnosis and treatment of systemic diseases of farm livestock, pets, equine and poultry
- 3.2 Definition, etiology, epidemiology, pathogenesis, symptoms, diagnosis, treatment and control of notifiable Trans-boundary animal disease
- 3.3 Definition, etiology, epidemiology, pathogenesis, symptoms, diagnosis, treatment and control of economically important infectious disease of farm livestock, pets, equine and poultry
- 3.4 Etiology, epidemiology, pathogenesis, symptoms, diagnosis, treatment and control of economically important parasitic disease (ecto and endo parasites) of farm livestock, pets, equine and poultry
- 3.5 Current practices and importance of epidemiological reporting, and animal health information system
- 3.6 Outbreak investigation and epidemic control
- 3.7 Laboratory diagnosis of important disease of animals and poultry
- 3.8 Prospects and constraints of vaccine production and use in Nepal
- 3.9 Veterinary drugs administration, their uses and abuses

Handwritten signature



Section C – 20 Marks

4. Zoonosis, animal production and Diseases Management (20%)

- 4.1 Zoonotic disease of public health importance
- 4.2 General control measures against parasitic and infectious diseases of animals and birds
- 4.3 Management of production and metabolic disease of farm livestock
- 4.4 Definition, etiology, diagnosis, treatment and management of sub-fertility, infertility, sterility and abortion in farm livestock under Nepalese condition
- 4.5 Importance of breeding management, A.I, and pregnancy diagnosis in farm animals
- 4.6 Reproductive disorder and its management in farm livestock

Section D – 20 Marks

5. International standard, quality and regulation (20%)

- 5.1 Slaughter house management and meat inspection principles and procedures
- 5.2 Outline of the World Trade Organization (WTOs), Sanitary and Phytosanitary measures (SPS)
- 5.3 Introduction to OIE (World Animal Health Organization, its objectives, function, and its role in standard setting)
- 5.4 Role of Official Veterinary Services in International Trade of animals, products of animal origin, food safety, import risk analysis, import permit, International Veterinary certifications, quarantine inspections and procedures
- 5.5 Animal health related Acts & Regulations:
 - 5.5.1 Animal Health and Livestock Service Act and regulation
 - 5.5.2 Slaughterhouse and Meat inspection Act and regulation
 - 5.5.3 Nepal Veterinary Council Act, 2055 and regulation, 2057
 - 5.5.4 Feed Act and regulation
 - 5.5.5 Drug Act
 - 5.5.6 National Park and Wildlife Conservation Act
 - 5.5.7 Nepal Standard (Certification Mark) Act
- 5.6 Legal Duties of a Veterinarian, Examinations of animals for soundness, injuries, and sudden death
- 5.7 Animal welfare
- 5.8 Detection of Frauds, Malicious poisoning
- 5.9 Differentiation of different species of blood, serum, semen, hair, hide and bones

Review



प्रथम चरणको लिखित परीक्षाबाट छनोट भएका उम्मेदवारहरूलाई मात्र लिइने सामूहिक परीक्षण (Group Test) को लागि सामूहिक छलफल (Group Discussion)

यस प्रयोजनको लागि गरिने परीक्षण १० पूर्णाङ्क र ३० मिनेट अवधिको हुनेछ जुन नेता विहीन सामूहिक छलफल (Leaderless Group Discussion) को रूपमा अवलम्बन गरिने छ। दिइएको प्रश्न वा Topic को विषयमा पालैपालोसँग 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, स्वास्थ्य बीमा, खाद्य सुरक्षा, प्रतिभा पलायन जस्ता Topics मध्ये कुनै एक Topic मात्र दिइनेछ।

Spec



कृषि स्नातक, अधिकृत छैठौँ तह/पदको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छः

प्रथम चरणः- लिखित परीक्षा (Written Examination)

पूर्णाङ्कः- २००

द्वितीय चरणः- (क) सामूहिक परीक्षण (Group Test)

पूर्णाङ्कः- १०

(ख) अन्तर्वार्ता (Interview)

पूर्णाङ्कः- ३०

परीक्षा योजना (Examination Scheme)

प्रथम चरणः लिखित परीक्षा (Written Examination)

पूर्णाङ्कः- २००

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्नसंख्या × अङ्क	समय
प्रथम	General Subject Part I: General Awareness & General Reasoning Test Part II: General Technical Subject	१००	४०	वस्तुगत (Objective) बहुवैकल्पिक प्रश्न (MCQs)	५० प्रश्न × १ अङ्क ५० प्रश्न × १ अङ्क	१ घण्टा ३० मिनेट
द्वितीय	Technical Subject	१००	४०	विषयगत (Subjective) छोटो उत्तर लामो उत्तर	४ प्रश्न × ५ अङ्क ८ प्रश्न × १ अङ्क	३ घण्टा

द्वितीय चरणः सामूहिक परीक्षण (Group Test) / अन्तर्वार्ता (Interview)

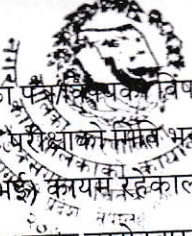
पूर्णाङ्कः- ४०

पत्र / विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	समय
सामूहिक परीक्षण (Group Test)	१०	—	सामूहिक छलफल (Group Discussion)	३० मिनेट
अन्तर्वार्ता (Interview)	३०	—	बोर्ड अन्तर्वार्ता (Board Interview)	—

दृष्टव्यः

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ। तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्यालकुलेटर (Calculator) प्रयोग गर्न पाइने छैन।
- विषयगत प्रश्नको हकमा तोकिएको अङ्कको 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।

Handwritten signature

- 
5. यस पाठ्यक्रम योजना अन्तर्गतका परीक्षाका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरू परीक्षाको निमित्त भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाइएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
 6. प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
 7. पाठ्यक्रम लागू मिति: - २०८३/०६/२९

Handwritten signature



प्रथम पत्र (Paper I): General Subject

Part (I): General Awareness & General Ability Test (50 Marks)

1. General Awareness and Contemporary Issues (25 × 1 Mark = 25 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, and livelihood & lifestyle of people
- 1.4 Notable events and personalities, social, cultural and economic conditions in modern history of Nepal
- 1.5 Current periodical plan of Nepal
- 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 Governance system and Government (Federal, Provincial and Local)
- 1.10 Provisions of civil service act and regulation relating to constitution of civil service, organisational structure, posts of service, fulfillment of vacancy and code of conduct
- 1.11 Functional scope of public services
- 1.12 Public Service Charter
- 1.13 Concept, objective and importance of public policy
- 1.14 Fundamentals of management : planning, organizing, directing, controlling, coordinating, decision making, motivation and leadership
- 1.15 Government planning, budgeting and accounting system
- 1.16 Major events and current affairs of national and international importance

2. General Reasoning Test (25 × 1 Mark = 25 Marks)

2.1 Logical Reasoning (9 × 1 Mark = 9 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 (8 × 1 Mark = 8 Marks)

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

2.3 Spatial Reasoning (8 × 1 Mark = 8 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

Part (B): General Technical Subject (50 Marks)

1. History and Current Status of Agriculture Sector in Nepal (5 marks)

- 1.1 History of agricultural research and development in Nepal
- 1.2 Overview of Nepalese agriculture: Current status and scope
- 1.3 Institutional arrangement of agricultural research, extension and education in Nepal
- 1.4 Agriculture Perspective Plan (APP) and its impact in Nepalese agriculture
- 1.5 Devolution of agriculture extension system and its impact in agricultural development

2. Agriculture Research, Extension and Education (5 marks)

- 2.1 Role of agriculture research in contemporary agriculture
- 2.2 Nepal Agricultural Research Council (NARC) and its vision

Signature

- 2.3 Agricultural education systems in Nepal
- 2.4 Academic institutions such as AFU, PU, etc.
- 2.5 Non-academic institutions (CTE, etc.) and its allied institutions
- 2.6 Major functions of agriculture, research, extension and education in Nepal
- 2.7 Linkage and coordination among research, extension and teaching in Nepal
- 2.8 Public, private, NGOs, CBOs, agricultural co-operatives and farmer groups involvement in research, extension and education
- 2.9 Participatory technology development, participatory planning, monitoring, evaluation and feedback

3. Natural Resource, Environment Conservation, Climate Change and Disaster-Risk Management (10 marks)

- 3.1 Importance of natural resources conservation, utilization and management w. r. t. food security, employment generation and livelihood improvement in Nepal
- 3.2 Bio-diversity and agro-biodiversity: Conservation and utilization for sustainable agriculture development
- 3.3 Use of fertilizers and pesticides in agriculture and their implications to environment
- 3.4 Integrated pest, crop, and plant nutrient management systems (IPM, ICM, IPNM) and Good Agricultural Practices (GAP)
- 3.5 Environmental issues and sustainability of Nepalese agriculture
- 3.6 Organic agriculture, and organic products for export promotion and food safety
- 3.7 General climatic conditions of Nepal
- 3.8 Weather observation and instruments use in Nepal
- 3.9 Climate change and its impact in agriculture sector
- 3.10 Climate change adaptation and mitigation strategies of Nepal
- 3.11 Disaster (landslide, drought, flood, cold spell, earthquake, pest outbreak) management in agriculture
- 3.12 Rapid urbanization and change in land use pattern and their consequences in food security, environment conservation, employment generation and youth migration
- 3.13 Crop insurance in Nepal: Current policies and status

4. Legislations, Plan, Policies, Strategies, and Global Trade in Agriculture (10 marks)

- 4.1 Agriculture sector in current constitution
- 4.2 Concept, goals, target and strategies of current periodic plan
- 4.3 Planning, implementation, monitoring and evaluation of agricultural projects
- 4.4 Local governance and its role in agricultural development
- 4.5 National Agriculture Policy, 2061 (2004)
- 4.6 Agro-biodiversity Promotion Policy, 2063 (2007) (first amendment, 2071)
- 4.7 Agri-business Promotion Policy, 2063 (2006)
- 4.8 Agriculture Development Strategy (ADS), 2015-2035 AD: vision, mission, target, components and its salient features, implementation status of ADS, supporting projects and institutional arrangement
- 4.9 National Seed Vision, 2013-2025 and its implementation status
- 4.10 Nepal Trade Integration Strategy (NTIS), 2016 - Agricultural commodities
- 4.11 Agricultural Extension Strategy, 2061 (2003)
- 4.12 Seeds Act, 2045 (1988) and Seeds Rules, 2069 (2013)
- 4.13 Plant Protection Act, 2064 (2007) and Plant Protection Rules, 2066 (2010)
- 4.14 Pesticides Management Act, 2076 (2019) and Regulation
- 4.15 Fertilizer Control Order, 2055
- 4.16 Food Right and Food Sovereignty Act, 2076 (2019)
- 4.17 Food Safety Policy, 2076 (2019)
- 4.18 Agro Forestry Policy, 2076 (2019)
- 4.19 World Trade Organization (WTO), Agreement on South Asian Free Trade Area (SAFTA): their implication and impact in Nepalese agriculture

[Handwritten signature]

- 4.20 Comparative advantage, agriculture commercialization and trading of Nepalese agricultural products.
- 4.21 Implication of Sanitary and Phyto-sanitary (SPS) measures in Nepalese agricultural trade

5. Agricultural Technology and Management (20 marks)

- 5.1 Importance of technology generation, verification and dissemination in crop production and management
- 5.2 Seed quality assurance: Seed production, laboratory testing, processing, handling, marketing and storage
- 5.3 Variety release and registration system in Nepal
- 5.4 Food and nutrition security: Concepts, status and dimensions
- 5.5 Importance of pests and pesticides management
- 5.6 Integrated Pest Management (IPM) concepts and strategies/practices
- 5.7 Roles of pollinators in crop production
- 5.8 Importance of microbial agents (fungus, bacteria, nematodes and virus) in plant protection
- 5.9 Importance of crop diversification and commercialization in Nepal.
- 5.10 Precision and protected agriculture: Concepts and technologies
- 5.11 Agricultural crops for agro-forestry and environmental protection
- 5.12 Strategies for commercialization of high value low volume commodities
- 5.13 Concept of soil fertility and productivity
- 5.14 Essential plant nutrients and their sources (manures and fertilizers)
- 5.15 Soil reaction (pH) and soil reaction improvement
- 5.16 Concept of Integrated Plant Nutrient Systems (IPNS) and its significance
- 5.17 Contemporary agricultural extension practices in Nepal (plant clinic, mobile service, training and demonstration farm, farmer to farmer extension and pluralistic extension)
- 5.18 Role of information and communication technology (ICT) in agriculture development
- 5.19 Agricultural markets and marketing in Nepal
- 5.20 Agricultural Management Information System (AMIS) in Nepal
- 5.21 Agriculture Census, 2068
- 5.22 Linkage of agro-industries with agriculture production and marketing
- 5.23 Role of cooperatives in agriculture development in Nepal
- 5.24 Research methodology in agriculture (basic concepts, common designs and their application)
- 5.25 Trade liberalization and its implication in Nepalese agricultural product
- 5.26 Value chain development: concepts and practices in agriculture
- 5.27 Postharvest management of agricultural commodities
- 5.28 Farming system and sustainable agriculture development
- 5.29 Gender Equity and Social Inclusion (GESI) and women's role in Nepalese agriculture
- 5.30 Conservation agriculture: concept, principles and practices

Slave



कृषि स्नातक, अधिकृत छैठौं तह/पदको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

द्वितीय पत्र (Paper II): Technical Subject

Section (A) – 25 Marks

1. Agricultural Extension

- 1.1 Extension Education, Training and Leadership Development
 - 1.1.1 Concepts, definition, principles, philosophy and objectives of extension education
 - 1.1.2 Role and scope of extension education in Nepalese agricultural development
 - 1.1.3 History of agricultural extension in Nepal
 - 1.1.4 New direction of agricultural extension (subject matter specialist, privatization, pluralistic, collaborative, gender mainstreaming in agriculture, pocket package strategy, public private partnership)
 - 1.1.5 Extension teaching methods and factors to be considered for selection of methods
 - 1.1.6 Training need assessment, designing training module and training management
 - 1.1.7 Leadership development and role of local leaders in Agricultural Extension
- 1.2 Communication, Innovation, Diffusion and Technology Transfer
 - 1.2.1 Role of communication in agricultural extension
 - 1.2.2 Communication models and Communication channels (mass media, inter personal, indigenous)
 - 1.2.3 Information and Communication technologies (ICTs) and Agricultural Extension
 - 1.2.4 Designing effective communication process
 - 1.2.5 Barriers of effective communication
 - 1.2.6 Innovation diffusion process
 - 1.2.7 Adopter's categories and factors affecting rate of adoption
 - 1.2.8 Development and transfer of technology and selection of appropriate technology
 - 1.2.9 Models of transfer of technology (e.g. Conventional, Feedback Model, Farming System Research and Extension, Farmers' Field School)
- 1.3 Agricultural Extension System & Extension Program Planning
 - 1.3.1 Agriculture extension Systems of Nepal in changing context
 - 1.3.2 Role, responsibility and coordination among stakeholders involved in agricultural extension in Nepal
 - 1.3.3 Effective extension program planning: Principles, importance and process in Nepalese context
 - 1.3.4 Factors to be considered in executing extension program

2. Agricultural Economics

- 2.1 Principles of Economics
 - 2.1.1 Basic concepts on demand and supply
 - 2.1.2 Price and income elasticity of demand, cross elasticity of demand
 - 2.1.3 Consumer's preference and indifference curve
 - 2.1.4 Market classification and price determination under different market condition
 - 2.1.5 Principles of production (production function, the law of diminishing return, isoquant, product curves, production possibility curves)

Office

- 
- 2.1.6 Cost of production (explicit and implicit costs, total, average, marginal, variable and fixed costs, economies and diseconomies of size and scale)
 - 2.1.7 Comparative and competitive advantage
 - 2.2 Agricultural Economics
 - 2.2.1 Farm Management
 - 2.2.1.1 Scope and importance of farm management
 - 2.2.1.2 Farm budgets (total and partial budgeting).
 - 2.2.1.3 Cost and return analysis (Major food grains, cash crops and horticultural crops)
 - 2.2.1.4 Farm plan (Resources, constraints and optimization).
 - 2.2.1.5 Efficiency measure; farm inventory management and valuation
 - 2.2.1.6 Time value of money, compounding and discounting techniques
 - 2.2.1.7 Income and net-worth statement
 - 2.2.2 Agricultural Marketing and Agri-business
 - 2.2.2.1 Concept, scope and role
 - 2.2.2.2 Characteristics of agricultural market and problems of marketing in Nepal
 - 2.2.2.3 Grading, standardization, quality control and related problems of agricultural commodities
 - 2.2.2.4 Value chain development in agriculture
 - 2.2.2.5 Business plan preparation
 - 2.2.2.6 Marketing of agricultural inputs (fertilizer, seeds, saplings, chemicals) and outputs (cereals, cash crops, fruits and vegetables)
 - 2.2.2.7 Global and regional context of agricultural marketing and trade (WTO, SAFTA, Indo-Nepal trade)
 - 2.2.2.8 Commodity markets in agriculture
 - 2.3 Agricultural Program Planning, Monitoring, Evaluation and Data Management
 - 2.3.1 Concepts of agricultural planning, preparation of programs/projects, budgeting and project cycle
 - 2.3.2 Feasibility studies of agricultural projects and use of B/C Ratio, IRR, Economic and Financial Rate of Return, Net Present Value
 - 2.3.3 Risk and uncertainty
 - 2.3.4 Monitoring and evaluation of agricultural programs/ projects
 - 2.3.5 Logical framework in project planning and monitoring
 - 2.3.6 Statistics and Survey Techniques
 - 2.3.6.1 Frequency distribution and measures of central tendency, bar and pie charts
 - 2.3.6.2 Computation of mean and standard deviation from grouped and ungrouped sets of data
 - 2.3.6.3 Hypothesis testing and confidence interval
 - 2.3.6.4 Regression and correlation analysis
 - 2.3.6.5 Estimate of errors, control of error
 - 2.3.6.6 Agriculture Census: Sample survey and its advantage over census survey
 - 2.3.6.7 Source of sampling and non-sampling error and measures to minimize such errors. Sample design for collecting current agricultural statistics in Nepal
 - 2.3.6.8 Rapid and Participatory Rural Appraisal (RRA and PRA) and crop cutting surveys

Section (B) – 25 Marks

3. Soil Science

- 3.1 General Introduction
 - 3.1.1 Definition of soil
 - 3.1.2 Soil forming process
 - 3.1.3 Physical properties of soils (texture, structure, density, porosity, consistency)

Handwritten signature

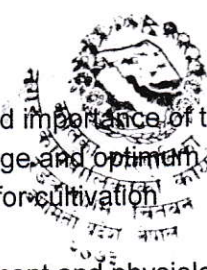


- 3.1.4 Chemical properties of soils (soil reaction, electric conductivity, cation exchange capacity, percentage base saturation, fertilizers and reclamation of problematic soil: Acidic & alkaline)
- 3.1.5 Biological properties of soils (algae, fungi, actinomycetes, soil bacteria)
- 3.1.6 Role of soil microorganisms in ammonification, nitrification, denitrification, biological nitrogen fixation (symbiotic and non-symbiotic)
- 3.1.7 Soil organic matter and carbon nitrogen ratio
- 3.2 Soil Fertility and Plant Nutrition
 - 3.2.1 Plant Nutrition
 - 3.2.1.1 Essential plant nutrients and their functions
 - 3.2.1.2 Visual symptoms of nutrient deficiencies and nutrient disorders
 - 3.2.1.3 Nutrient cycle (C, N, P, and S) and its component
 - 3.2.1.4 Nutrient requirements, uptake mechanism
 - 3.2.1.5 General soil fertility status of Nepal and major causes of declining soil fertility
 - 3.2.1.6 Soil testing, plant analysis and diagnostic techniques for improved soil fertility management
 - 3.2.1.7 Integrated Plant Nutrient Systems and its significance in sustainable soil management in the Nepalese context
 - 3.2.2 Manures and Fertilizers
 - 3.2.2.1 Different types of chemical fertilizers and their application
 - 3.2.2.2 Sources and types of organic manures
 - 3.2.2.3 Bio-fertilizers, inoculants and their use in Nepalese agriculture
 - 3.2.2.4 Fertilizers available in Nepalese market and their use
 - 3.2.2.5 Fertilizer regulation, marketing and quality control mechanism in Nepal
- 3.3 Soil survey and Water conservation
 - 3.3.1 Soil Survey
 - 3.3.1.1 Importance of soil survey and types
 - 3.3.1.2 General soil classification
 - 3.3.1.3 Major soils of Nepal and their characteristics (suborder/great group levels of USDA taxonomy).
 - 3.3.1.4 Soil fertility mapping and tools used
 - 3.3.2 Soil, Water and Plant Relationship
 - 3.3.2.1 Hydrological cycle
 - 3.3.2.2 Water infiltration and percolation
 - 3.3.2.3 Soil permeability and Hydraulic conductivity
 - 3.3.2.4 Saturation percentage, permanent wilting point, field capacity and plant available soil water
 - 3.3.2.5 Soil moisture retention curve
 - 3.3.2.6 Crop water requirements, evapo-transpiration and irrigation requirements, water balance
 - 3.3.2.7 Soil water management, water stress (drought, water logging)
 - 3.3.2.8 Soil Erosion, Slopping Agriculture Land Technology (SALT) and terracing

4. Agronomy

- 4.1 Basics of crop production
 - 4.1.1 Farming system
 - 4.1.1.1 Introduction, system approach in agriculture, component/determinants of farming system
 - 4.1.1.2 Farming System Research Methodology (FSR)
 - 4.1.1.3 Framework of FSR methodology
 - 4.1.2 Resource conservation technologies (RCT) in crop production

Ami

- 
- 4.1.3 Tillage
 - 4.1.3.1 Objective, significance and importance of tillage in crop production
 - 4.1.3.2 Zero tillage, minimum tillage, and optimum tillage
 - 4.1.3.3 Condition of soil suitable for cultivation
 - 4.1.4 Seed Technology
 - 4.1.4.1 Seed formation, development and physiology of seed
 - 4.1.4.2 Seed quality and seed classes
 - 4.1.4.3 Principles and practices of seed production
 - 4.1.4.4 Seed processing, handling and storage
 - 4.1.4.5 Seed testing principles
 - 4.1.4.6 Seed certification procedures and seed standards of major crops in Nepal
 - 4.1.4.7 Importance of Varietal Replacement and Seed Replacement Rate
 - 4.1.4.8 Seed self-sufficiency and seed production programs in Nepal
 - 4.2 Crop production technology
 - 4.2.1 Production practices of rice, maize, wheat, finger millet, lentil, soybean, chickpea, mungbean, rapeseed, sunflower, groundnut, sugarcane with respect to:
 - 4.2.1.1 Importance, distribution, origin and classification
 - 4.2.1.2 Morphology and growth stages
 - 4.2.1.3 Recommended varieties
 - 4.2.1.4 Climate and soil
 - 4.2.1.5 Cultural practices and post-harvest technology
 - 4.2.2 Underutilized crops and their importance in food and nutritional security
 - 4.3 Plant breeding and research design
 - 4.3.1 Definition, importance, history and achievement of plant breeding
 - 4.3.2 Methods of crop improvement and breeding methods in field crops
 - 4.3.3 Classification of crops according to mode of pollination
 - 4.3.4 Germplasm collection, characterization, evaluation and utilization
 - 4.3.5 Variety development procedure in Nepal
 - 4.3.6 Maintenance breeding of varieties/germplasms.
 - 4.3.7 Hybrid variety development and hybrid seed production.
 - 4.3.8 Use of biotechnology in plant breeding
 - 4.3.9 Research design and application

Section (C) – 25 Marks

5. Horticulture

- 5.1 Cultivation practices of major horticultural crops
 - 5.1.1 Fruits: Citrus (*Citrus* spp.), Mango (*Mangifera indica*), Litchi (*Litchi chinensis*), Banana (*Musa acuminata*), Apple (*Malus pumila*), Pear (*Pyrus communis*) and Kiwi (*Actinida deliciosa*)
 - 5.1.2 Vegetables: Potato (*Solanum tuberosum*), tomato (*Solanum lycopersicum*), chili (*Capsicum frutescens*), cucumber (*Cucumis sativus*), cauliflower (*Brassica oleracea* var *botrytis*), radish (*Raphanus sativus*), beans (*Phaseolus vulgaris*), onion (*Allium cepa*), Pea (*Pisum sativum*) and broad leaf mustard (*Brassica juncea* var *rugosa*)
 - 5.1.3 Spice crops: Ginger (*Zingiber officinale*), Turmeric (*Curcuma longa*) and Cardamom (*Amomum subulatum*)
 - 5.1.4 Flower: Rose (*Rosa* spp.), carnation (*Dianthus caryophyllus*), gladiolus (*Gladiolus* spp.) and Gerbera (*Gerbera jamesonii*)
 - 5.1.5 Plantation crops: Tea (*Camellia sinensis*) and Arabica coffee (*Coffea arabica*)
- 5.2 Vegetable Seed production technology
 - 5.2.1 Vegetable seed production zones of Nepal

blue



- 5.2.2 Classification and types of seeds (breeder, foundation, certified and improved; Open pollinated, hybrids, True Potato Seed and Pre-basic Seed)
- 5.2.3 Hybrid seed production of tomato in Nepal and seed production of open pollinated crops (cauliflower, radish, cucumber, and onion)
- 5.3 Postharvest management of horticultural crops
 - 5.3.1 Post harvest physiology: transpiration, respiration and ripening of fruit and vegetables
 - 5.3.2 Causes of postharvest loss and their management
 - 5.3.3 Storage of potato and fruits: principles, importance and different storage structures
 - 5.3.4 Preservation of fruits and vegetables
- 5.4 Nursery management in fruits and vegetables
 - 5.4.1 Sexual and asexual propagation techniques of horticultural crops
 - 5.4.2 Nursery types and its use in horticultural crop production including hi-tech nurseries
 - 5.4.3 Use of rootstocks in horticulture
 - 5.4.4 Care and management of plants in nursery
- 5.5 Modern technologies in horticulture
 - 5.5.1 Organic farming, soilless farming, tissue culture technology for tuber and sapling production, high density planting, modern irrigation technologies, use of machineries in horticulture
 - 5.5.2 Precision and protected horticultural technology
 - 5.5.3 Urban farming technologies (roof top, vertical farming and home garden)
 - 5.5.4 Use of plant growth regulators and hormones in horticulture
- 5.6 Plant growth and development
 - 5.6.1 Seed germination: mechanism and controlling factors
 - 5.6.2 Flowering, pollination, fruit set, fruit drop and fruit maturity
 - 5.6.3 Fruit ripening and senescence: mechanism and controlling factors
 - 5.6.4 Tuber and bulb formation: mechanism and controlling factors

Section (D) – 25 Marks

6. Plant Protection

- 6.1 General Plant Protection
 - 6.1.1 Importance of crop pests & disease
 - 6.1.2 Climate change and implication on crop pest & disease
 - 6.1.3 Plant protection principle and approaches
 - 6.1.4 Importance, issues, challenges and role of plant quarantine in Nepalese agriculture
 - 6.1.5 Importance of pest survey and surveillance in disease/pest forecasting and early warning
 - 6.1.6 Types of sprayers, duster and seed treatment Equipments
 - 6.1.7 Use of equipment, calibration, dose calculation
 - 6.1.8 Biological control of pests and diseases
 - 6.1.9 Tools used for pest monitoring
 - 6.1.10 Insect predators, pathogens and parasitoids
 - 6.1.11 Biopesticides & Biofungicides in pest & disease control
 - 6.1.12 Type of Pesticide formulation
 - 6.1.13 WHO classification of pesticide by hazard
 - 6.1.14 Banned pesticides in Nepal
 - 6.1.15 Safe use of pesticides
 - 6.1.16 Status of pesticide use in Nepal
 - 6.1.17 Symptoms and treatment of pesticide poisoning
 - 6.1.18 Different methods of pesticide residue monitoring
 - 6.1.19 Weed management

Handwritten signature



- 6.1.20 Rodents and their management
- 6.2 Entomology
 - 6.2.1 Industrial Entomology
 - 6.2.1.1 Importance of industrial entomology
 - 6.2.1.2 Biology of silkworm and honey bee
 - 6.2.2 Agricultural Insect Pests of National Importance and their Management
 - 6.2.2.1 Cereals: Stem borers (*Chilo partellus*; *Chilo suppressalis*; *Sesamia inferens*; *Scirpophaga incertulas*); Green leaf hopper (*Nephotettix nigropictus*); Brown plant hopper (*Nilaparvata lugens*); Gundhi bug (*Leptocoris chinensis*); White grubs (*Melolontha* spp.; *Phyllophaga* spp.; *Holotrichia* spp.); white fly in rice, Fall Armyworm (*Spodoptera frugiperda*)
 - 6.2.2.2 Vegetables: Cutworm (*Agrotis ipsilon*; *A. segetum*); Pumpkin fruit fly (*Bactrocera cucurbitae*); Aphids (*Myzus persicae*; *Aphis fabae*; *A. gossypii*; *A. craccivora*; *Brevicoryne brassicae*); Red ants (*Dorylus orientalis*); Shoot and fruit borer (*Leucinodes orbonalis*); Large white butterfly (*Pieris brassicae nepalensis*); Fruit borer (*Helicoverpa armigera*); Tobacco caterpillar (*Spodoptera litura*); Potato tuber moth (*Phthorimaea operculella*); Diamondback moth (*Plutella xylostella*); White fly (*Bemisia tabaci*); South american leaf miner (*Tuta absoluta*)
 - 6.2.2.3 Cash Crops
 - 6.2.2.3.1 White stem borer of coffee (*Xylotrechus quadripes*)
 - 6.2.2.3.2 Sugarcane plassey borer (*Chilo tumidicostalis*)
 - 6.2.2.3.3 Pink bollworms (*Pectinophora gossypiella*)
 - 6.2.2.4 Fruits
 - 6.2.2.4.1 Sub-tropical fruits: Citrus fruit fly (*Bactrocera* spp.); Scale insects (*Aspidiotus destructor*, *Aonidiella aurantii*); Citrus green stinkbug (*Rhynchocoris poseidon*)
 - 6.2.2.4.2 Tropical fruits: Mango hoppers (*Idioscopus clypealis*, *I. nitidulus* and *Amritiodus atkinson*); Banana stem weevil (*Odoiporus longicollis*); Banana rhizome weevil (*Cosmopolites sordidus*); Litchi leaf curl mite (*Aceria litchii*)
 - 6.2.2.4.3 Temperate fruits: Apple wooly aphid (*Eriosoma lanigerum*); San Jose scale (*Quadraspidiotus perniciosus*)
 - 6.2.2.4.4 Ornamental and Flowers: Red Spider Mite (*Tetranychus* spp.)
- 6.3 Plant Pathology:
 - 6.3.1 Introduction and importance of plant diseases
 - 6.3.2 Mechanism of infection by plant pathogen, Host Plant Resistance
 - 6.3.3 Defense mechanisms of host plants
 - 6.3.4 Genetics and disease resistance in plants
 - 6.3.5 Plant disease epidemiology and forecasting
 - 6.3.6 Agricultural Crop Diseases of National Importance and Their Management
 - 6.3.6.1 Cereals: Rice blast (*Piricularia oryzae*); Bacterial blight (*Xanthomonas campestris* pv *oryzae*); Stalk rot (*Erwinia carotovora*); Leaf blight (*Helminthosporium turcicum*); Rusts (*Puccinia graminis tritici*, *P. recondita*, *P. striiformis*); Loose smut (*Ustilago tritici*)
 - 6.3.6.2 Vegetables and spices: Late blight (*Phytophthora infestans*); Bacterial wilt (*Ralstonia solanacearum*); Alternaria leaf spots (*Alternaria brassicicola*, *A. brassicae*); Damping off of seedlings (*Pythium* spp., *Fusarium* spp.); Club root (*Plasmodiophora brassicae*); Root knot (*Meloidogyne* spp.); Anthracnose (*Colletotrichum* spp.); Tomato yellow leaf curl virus; Rhizomes rot of ginger and cardamom (*Pythium* spp., *Fusarium* spp.)
 - 6.3.6.3 Fruits and others: Foot and root rot (*Phytophthora citrophthora*, *P. nicotianae*); Citrus greening (*Huanglongbin*) – (*Liberibacter asiaticum*); Pink disease (*Pellicularia samonclor*); Scab (*Venturia inaequalis*); Powdery mildew (*Levullela taurica*); Panama wilt of banana (*Fusarium oxysporum*); Coffee rust (*Hemalia vestatrix*); Septoria blight of marigold (*Septoria apicola*)

Handwritten signature



6.4 Mushroom cultivation

6.4.1 Cultivated species of mushroom in Nepal

6.4.2 Cultivation techniques of *Pluerotus* spp. and *Agaricus* spp.

6.5 Laboratory Techniques & production

6.5.1 Isolation

6.5.2 Culture and preservation

6.5.3 Mounting & culturing

6.5.4 Sterilization

6.5.5 Different media used

6.5.6 Production technique of *Metarhizium anisopliae*, *Beauveria bassiana* & *Trichoderma harzianum* T. viridae

Wise



प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र लिइने सामूहिक परीक्षण (Group Test) को लागि सामूहिक छलफल (Group Discussion)

यस प्रयोजनको लागि गरिने परीक्षण १० पूर्णाङ्क र ३० मिनेट अवधिको हुनेछ जुन नेता विहीन सामूहिक छलफल (Leaderless Group Discussion) को रूपमा अवलम्बन गरिने छ। दिइएको प्रश्न वा Topic को विषयमा पालैपालोसँग 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, स्वास्थ्य बीमा, खाद्य सुरक्षा, प्रतिभा पलायन जस्ता Topics मध्ये कुनै एक Topic मात्र दिइनेछ।

U/see

कालिका नगरपालिका
रेडक्रस प्रा. लि. चितवन

उद्यम विकास सहजकर्ता (Enterprise Development Facilitator) सहायकस्तर चौथोको पाठ्यक्रम
परीक्षाको किसिम

सि.नं.	चरण	विवरण	पूर्णाङ्क	उत्तीर्णाङ्क	
१	प्रथम चरण	लिखित परीक्षा	१००	४०	
२	द्वितीय चरण	अन्तर्वार्ता	२०		

लिखित परीक्षा (Written Examination)

पूर्णाङ्क: १००

उत्तीर्णाङ्क: ४०

चरण	पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या / अङ्क	समय
प्रथम चरण	प्रथम पत्र	सामान्य ज्ञान	५०	२०	वस्तुगत बहुवैकल्पिक प्रश्न	१०×१=१०	१ घण्टा
		सेवा सम्बन्धी				४०×१ = ४०	
	द्वितीय पत्र	सेवा सम्बन्धी	५०	२०	विषयगत प्रश्न	८×५ = ४० १×१०= १०	१ घण्टा ३० मिनेट
द्वितीय चरण	अन्तर्वार्ता		२०				

१. प्रथम चरणको लिखित परीक्षामा प्रश्नहरू नेपाली माध्यममा सोधिनेछन्। तर विषयको स्पष्ट गर्नुपर्ने प्रश्नमा अंग्रेजी भाषाको प्रयोग गर्न सकिनेछ।
२. प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ।
३. उम्मेदवारले प्रथम चरण र द्वितीय चरणमा प्राप्त गरेका प्राप्ताङ्कहरू जोडी कुल अङ्कको आधारमा योग्यताक्रमानुसार अन्तिम नतिजा प्रकाशित गरिनेछ।

प्रथम चरण: लिखित परीक्षा

खण्ड (क): सामान्य ज्ञान

१. नेपालको संविधान सम्बन्धी सामान्य जानकारी
२. स्थानीय सरकार सञ्चालन ऐन, २०७४ सम्बन्धी सामान्य जानकारी
३. स्थानीय तहको वार्षिक बजेट तथा योजना तर्जुमा दिग्दर्शन, २०७४ (प्रथम संशोधन) सम्बन्धी सामान्य जानकारी
४. गरिबी निवारणका लागि लघु उद्यम विकास कार्यक्रम सञ्चालन निर्देशिका, २०७७

Yue



खण्ड (ख): सेवा सम्बन्धी

१. उद्यम विकासका लागि सामाजिक परिचालन

(क) बजार स्रोत सम्भाव्यता अध्ययन

(ग) अभिमुखीकरण

(ङ) समूह गठन तथा क्षमता विकास

(ख) सहभागितात्मक ग्रामीण लेखाजोखा (PRA)

(घ) घरघुरी सर्वेक्षण

(च) बचत परिचालन

२. उद्यमशीलता विकास तालिम

(क) सम्भाव्य उद्यमीका लागि तालिम (TOP)

(ग) लैङ्गिक समानता तथा सामाजिक समावेशीकरण (GESI)

(ख) उद्यम सुरुवात तालिम (TOS)

(घ) व्यवसाय योजना (Business Plan)

३. सीप विकास तालिम

(क) आवश्यकता पहिचान (ख) तालिम पाठ्यक्रम (ग) तालिम प्रस्तावना (घ) रोष्टर

(ङ) तालिम सञ्चालन प्रक्रिया (च) तालिम सञ्चालन

४. लघुवित्तमा पहुँच

(क) लघुवित्त कर्जा (ख) वित्तीय संस्था तथा प्रकारहरू

(ग) समन्वय (घ) सहजीकरण

(ङ) वित्तीय सेवा लिने प्रक्रिया

५. उपयुक्त प्रविधि हस्तान्तरण

(क) आवश्यकता पहिचान (ख) उपयुक्त प्रविधिबारे जानकारी

(ग) प्रविधि हस्तान्तरण प्रक्रिया

६. बजारीकरण तथा परामर्श

(क) बजार (ख) बजारीकरण समिश्रण

(ग) वितरण माध्यम, व्यापार मेला तथा प्रदर्शनी

(घ) बौद्धिक सम्पत्ति अधिकार

(ङ) परामर्श

(च) परामर्शका शैलीहरू

७. उद्यमीको क्षमता अभिवृद्धि

(क) Advance Training (ख) भइरहेको उद्यमीका लागि व्यवसाय सुधार तालिम (TOEE)

(ग) व्यवसाय विस्तार तथा स्तरोन्नति तालिम (TOGE)

(घ) अवलोकन भ्रमण

८. उद्यम घर (CFC)

(क) प्रस्तावना

(ख) स्थापनाका प्रक्रिया

९. अनुगमन / मूल्याङ्कन

१०. कम्प्युटर सम्बन्धी सामान्य जानकारी

(क) Word (ख) Excel (ग) Power point (घ) E-mail / Internet (ङ) Database (GESIMIS)

द्वितीय चरण: अन्तर्वार्ता

अङ्क विभाजन

क्र.सं.	विवरण	पूर्णाङ्क
१	उम्मेदवारको व्यक्तित्व	५
२	उम्मेदवारको अनुशासन र समय पालना	५
३	विषयवस्तुको ज्ञान	१०
	जम्मा	२०

Spici