National Trust for Nature Conservation
Curriculum for the Post of Officer

Job Title: Veterinary Officer
Level: O1
Basic Academic Qualification: Master's in related subject

General Information:
- All questions will be subjective.
- Questions will cover all the units.
- Exam will be held on each paper separately.
- The candidate must obtain at least 70% marks in each paper.
- Candidate passed in written exam, will be called for the interview.
- The candidate will be selected on merit basis.
- Notwithstanding anything contained in the curriculum below, candidates are required to update themselves with Act and Rules amended at least three months prior to the examination.

For written exam
Full Marks: 200
Pass Marks: 70% (Each Paper)

<table>
<thead>
<tr>
<th>Paper</th>
<th>Subject</th>
<th>Examination system</th>
<th>No. of questions</th>
<th>Weightage</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>First</td>
<td>A. Organization, Management and Development</td>
<td>Subjective (Fact Based)</td>
<td>5</td>
<td>10*10 = 100</td>
<td>3 hours</td>
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<tr>
<td></td>
<td>B. Natural Resources Management</td>
<td></td>
<td>5</td>
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<tr>
<td>Second</td>
<td>Related Subject</td>
<td>Subjective (Fact Based)</td>
<td>10</td>
<td>10*10=100</td>
<td>3 hours</td>
</tr>
</tbody>
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Interview ( 50 marks )
1. Power Point presentation – 25 marks
   The candidate will be required to give a presentation on how he/she would manage and perform his/her duty. (20 minutes)
2. Academic Qualification - 5 marks
   A candidate's score in academic qualification will have points.
   (Distinction – 5, First division – 3, Second division – 2)
3. Interview and Personality Test – 20 marks
   (Content – 15, Personality test – 5)

First Paper:
A. Organization, Management and Development
1. Fundamental aspects of organization
   - Meaning, Principles and importance
   - Forms of organization: Flat, Vertical, Matrix, Dumbbell
2. Organizational structure and procedure
   - Organization Structure
   - Organization and Management(O&M)
   - Organizational environment
   - Authority, Accountability and Responsibility
3. Basic principles of organization
   - Unity of command
   - Span of control
   - Hierarchy
   - Organizational behavior
   - Group dynamics, and Team Work
   - Staff agency and Line agency
4. Operational methods
   - Co-ordination
• Co-operation
• Delegation of authority
• Supervision
• Monitoring and evaluation
• Record management
• Reporting

5. **Management**
   • Concepts and principles of management
   • Leadership, Motivation,
   • Decision making
   • Control and Direction
   • Communication Skills
   • Negotiation skills
   • Budgeting

6. **Aspects of management**
   • Human resource management
   • Conflict management
   • Stress management
   • Change management
   • Disaster management
   • Time management
   • Office management

7. **Aspects of administration**
   • Accountability
   • Transparency
   • Responsibility
   • Financial administration
   • Ethics and discipline
   • Performance based pay system
   • Grievance handling
   • Public relation skills

8. **Contemporary issues**
   • Good governance
   • Sustainable development
   • Poverty alleviation
   • Inclusion and positive discrimination
   • Social justice and security
   • Climate change
   • Environment pollution
   • Ecosystem
   • Biodiversity conservation
   • Natural resources management

**B. Natural Resource Management**

1. **Natural Resource Management**
   • Concept of NRM
   • Significance of natural resources in terms of environment and economy
   • Types of natural resources
   • Principles of Natural resource management
   • Natural Resource Management practices and emerging problems

2. **Natural Resource and Biodiversity conservation**
   • Concept and principles of biodiversity (as defined by convention on biodiversity 1992)
   • Social, ecological and economic values of biodiversity
   • Major biological diversity of Nepal and the threats for their conservation.
3. Role of different agencies in natural resource management

- Role of ministry of forestry
- Role of department of forestry
- Role of department of national park and wildlife conservation
- Role of district forest office and other local governmental agencies
- Role of national trust for nature conservation
- Role of community forest user group (CFUGs)
- Role of leasehold forest groups
- Role of community development groups and buffer zone committee in conserving biodiversity of the country
- Role of nongovernmental organizations in managing natural resources
- People's participation and role of people/local organizations in managing natural resource
- Strength and weakness of stakeholders in Nepal.

4. Planning and management of national parks and protected areas

- Concepts and areas to Protected Area management system
- Status and classification of protected areas in Nepal (National park, conservation area, hunting reserves, wildlife reserve, buffer zone)
- Preparation and implementation of management plans for different types of protected areas
- Principles and practices of eco-tourism, visitors management
- Principles and practices of conflict resolution and monitoring of protected areas management
- Principles and practices of wildlife census

5. Cross Cutting Areas in Natural Resource Management

- Concept of project cycle and logical framework in project designing
- Gender and social equity issues in natural resource management
- Concept of good governance in natural resource management and its practice in Nepal
- Contribution of protected area system of Nepal in promoting eco-tourism and reducing poverty
- Monitoring and evaluation of natural resource management in Nepal
- Contribution of community forestry, leasehold and buffer zone communities in eco-tourism

6. National Policies

- Economic policy
- Commercial policy
- Environmental policy
- Tourism policy
- Fiscal policy
- Current national plan
- National Biodiversity Strategy (NBS) 2002
- National Conservation Strategy (NCS) 1988
- National Plan for Forestry Sector (MPFS) 1988
- NEPAP
- National Wetland Policy (NWP) 2002
- Medicinal Plants and NTFP Policy, 2061 (Jadibuti tatha gairakastha banpaidawar Niti 2061)
- Wildlife farming, breeding and research policy, 2060
- Domesticated Elephant Management Policy, 2060
- Procedure for the preparation of Biodiversity Documents, 2060
- Guidelines for the preparation of Terms of Reference and Final report of the Initial Environmental Examination (IEE) 2061
- Wetland Policy, 2060
- Nepal Water Policy, 2004

7. Organizational Legislation

- National trust for nature conservation act
- Forest Act, 2049
- Forest Regulation, 2051
- Buffer Zone Management Regulations, 2052
• Environment Protection Act, 2053,
• Environment Protection Regulations, 2054
• Private Forest Nationalization Act, 2013
• Soil and Water Conservation Act, 2039
• National Parks and Wildlife Conservation Act, 2029
• National Parks and Wildlife Conservation Regulation, 2030
• National Trust for Nature Conservation Act
• The tourism act 1975
• Aquatic Animals Protection Act 1961
• Public Procurement Act
• Conservation Area Management Regulation, 2053
• Other regulations
• Bylaws of NTNC

8. National Trust for Nature Conservation
   • Formation
   • Objectives, vision, mission
   • Activities, plan and policies
   • Partners and stakeholders
   • Roles and challenges
   • Future plan and opportunities
National Trust for Nature Conservation
Curriculum for the Post of Officer

Job Title: Veterinary Officer
Level: O1
Basic Qualification: Master's in Veterinary Science
Second Paper: Veterinary Science

1. Introduction
- History and current status of veterinary services in Nepal
- Role of public and private sector in the promotion of veterinary services in Nepal

2. Clinical subjects
2.1 Veterinary Medicine
- 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
- 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
  - Metabolic and production diseases
  - Nutritional deficiencies disease
  - 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
  - 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; Actinomycosis; Actinobacillosis; Brucellosis; Listeriosis; Leptospirosis; Mastitis; Strangles; Glanders; Degnala disease; Salmonellosis; Mycoplasmosis; Mad cow disease; Rabies; Scrapie; Canine distemper;
  - Etiology, epidemiology, transmission, pathogenesis, symptoms, diagnosis, treatment, and control of the common disease caused by chlymedia, Ricktesia and Fungi in different species of animals
  - 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
  - Parasitic disease: Etiology, epidemiology, transmission, pathogenesis, symptoms, diagnosis, treatment, control of the following parasitic disease
    - Helminthic parasitic disease: LF; Paramphistomiiasis; 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
    - Diagnosis, treatment and management of different form of poisonings and snake bite
    - Prospects and constrains of animal and poultry vaccine production in Nepal, their uses and abuses

2.2 Veterinary Surgery
- General surgical principles and procedures adopted in surgery
- Pre and post operative considerations
- Antiseptics and disinfectants
- Sterilizations of surgical materials and instruments.
- Importance of sutures and suturing materials
- Inflammations; Abscess; Tumors; Cysts; Heamotoma; Hernia and their treatment
- Different types of wounds and their treatment
- Gangrene; Burn, Scald; Frost bite and their treatment
- Fractures and dislocations, their diagnosis and treatment
• Special surgery; Caesarian section; Rumenotomy; Ovario-histerectomy, Stringhalt; Spaying and Neutering
• Different types of local, regional and general anesthetic procedures

2.3 Veterinary obstetrics and Gynecology
• Normal reproductive cycle of different farm animals and dogs.
• Breeding soundness examination of bull
• Detection of heat
• Artificial insemination
• Pregnancy diagnosis
• Embryo transfer
• Concept of infertility and sterility
• Diagnosis and treatment of silent estrus, an-estrus, repeat breeders metritis, endometritis and pyometra
• Dystokia and its correction
• Prolapse of uterus, bladder and vagina
• Use of hormones and prostaglandins
• Infectious disease causing abortions

2.4 Epidemiology and Veterinary public health
• Definition, aim, objectives and application of epidemiology
• Epidemiological concept of disease control
• Surveillance and monitoring of disease
• Different types of epidemiological studies
• Outbreak investigation
• Prevalence rate, incidence rate and difference between them
• Characteristics of host factor, agent factor and environmental factor
• Different terminology used in epidemiology
• Epidemiological reporting practices in Nepal
• Cost analysis of the disease control programs
• Risk analysis
• Definition and objective of VPH
• Different roles of VPH (Animal production, food hygiene and environmental protection)
• Diagnosis, surveillance and control of various zoonotic disease
• Meat inspection: anti-mortem, post-mortem and re-inspection
• Different component and management of slaughterhouse
• Milk hygiene
• Concept of HACCP (Hazard analysis and critical control point)

2.5 Veterinary extension
• Definition, philosophy and principles of extension education
• Classification of extension teaching methods
• Public private partnership
• Social mobilization (CBOs, NGOs, and INGOs)

2.6 Clinical pathology and parasitology
• Materials to be sent to laboratory for different disease diagnosis
• Hematological examinations (TC, DC, ESR, PCV, RBC count, Blood smears, hemoglobin estimation
• Blood chemistry (estimation of blood glucose, serum and calcium
• Liver and kidney functions tests
• Urine analysis (Routine test, test for detection of protein, Glucose, Ketone bodies, blood, bile pigment
• Blood and urine culture and antibiotic sensitivity tests
• California mastitis tests
• 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)
• Post mortem examinations
• Clinical parasitology (Examination of feces: direct smear method, concentration method and Floatation method)
• Examination of skin scrapping
• Bacterial, Viral and Fungal serological techniques
• ELISA

3. Para-clinical subjects

3.1 Veterinary Microbiology
• General characteristics, properties, morphology, metabolism, growth and reproduction of bacteria, virus and fungus of various classes.
• Bacterial genetics, mutation and variations associated with virulence
• Antigenicity, drug resistance
• Principles of antiseptics, sterilization and disinfection
• 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
• Immunization of animals
• Hypersensitivity-allergy
• Bacteriophage, their description and application
• Laboratory techniques for bacterial, viral, fungal culture and identification
• Important diseases of domesticated animals caused by bacteria, viruses, rickettsia, chlamydia and fungi

3.2 Veterinary Parasitology
• Parasites and Parasitism, Types of parasitism, host-parasite relationship
• Importance of immunity against parasitic diseases
• Classification and nomenclature of parasites and characteristics of different classes of parasites
• Parasite development in the host system
• Antiparasitic and anthelmintic medication, their use and abuse. Anthelmintic resistance
• 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
• Protozoan parasites of domesticated animals and birds, their classification, morphology and the diseases caused by them with epidemiology, effects and control strategies
• Identification of different parasites and the methods of their culture and laboratory growth

3.3 Veterinary Pathology
• Pathological responses of body to infection
• Inflammation, classification and changes in inflammatory responses
• Pathological disturbances and responses in circulatory system, cell metabolism, pigment metabolism
• Disturbances in growth, Neoplasm and cancer
• Healing, fever
• Uroliths, choleliths, sialoliths, pancreoliths, enteroliths
• Immune reactions. Hypersensitivity and auto immunity
• 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
• Pathological changes in diseases caused by bacteria, viruses, fungus and parasites of domesticated animals and birds

3.4 Veterinary Pharmacology and Toxicology
• Principles of drug activity, pharmacokinetics and pharmacodynamics of the drugs acting on central nervous system
• Anesthetics, hypnotics, sedatives, tranquilizers, analgesics, analeptics, antipyretics, histamines and antihistamines
• Anaesthetics, Neuromuscular blocking agents, Peripheral and Central muscle relaxants
• Drugs acting on autonomic nervous system, neurohumoral transmission, adrenergic antagonists, cholinergic antagonists
• Drugs acting on cardiovascular system, digestive system, respiratory system, urogenital system and skin and mucus membrane
4. Pre-clinical subjects

4.1 Veterinary Anatomy
- 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
- 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
- General embryology, gametogenesis, fertilization, and development of fetus and body organs in domesticated animals and birds

4.2 Veterinary Physiology
- 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
- Composition and function of tissue fluids
- Mechanism of respiration and gaseous exchange

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

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

5. Animal Health Management
a. Animal Health management
- Etiology, diagnosis and treatment of systemic diseases of farm livestock, pets, equine and poultry
- Definition, etiology, epidemiology, pathogenesis, symptoms, diagnosis, treatment and control of notifiable Trans-boundary animal disease
- Definition, etiology, epidemiology, pathogenesis, symptoms, diagnosis, treatment and control of economically important infectious disease of farm livestock, pets, equine and poultry
- Etiology, epidemiology, pathogenesis, symptoms, diagnosis, treatment and control of economically important of parasitic disease (ecto and endo parasites) of farm livestock, pets, equine and poultry
- Zoonotic disease of public health importance
- General control measures against parasitic and infectious diseases of animals and birds.
- Management of production and metabolic disease of farm livestock
• Definition, etiology, diagnosis, treatment and management of sub-fertility, infertility, sterility and abortion in farm livestock under Nepalese condition
• Importance of breeding management, A.I, and pregnancy diagnosis in farm animals
• Reproductive disorder and its management in farm livestock
• Current practices and importance of epidemiological reporting, and animal health information system
• Outbreak investigation and epidemic control
• Laboratory diagnosis of important disease of animals and poultry
• Prospects and constrains of vaccine production and use in Nepal
• Veterinary drugs administration, their uses and abuses

b. **International standard, quality and regulation**
• Slaughter house management and meat inspection principles and procedures
• Outline of the World Trade Organization (WTOs), Sanitary and Phytosanitary measures (SPS)
• Introduction to OIE (World Animal Health Organization, its objectives, function, and its role in standard setting
• 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
• Animal health related Acts & Regulations:
  • Animal Health and Livestock Service Act, 2055 and regulation, 2056
  • Slaughterhouse and Meat inspection Act, 2055 and regulation, 2057
  • Nepal Veterinary Council Act, 2055 and regulation, 2057
  • Feed Act, 2033 and regulation, 2051
  • Drug Act, 2035
  • Muluki Ain, 2019 (Concerning Provisions only)
  • National Park and Wildlife Conservation Act, 2029
  • Nepal Standard (Certification Mark) Act, 2037
• Legal Duties of a Veterinarian, Examinations of animals for soundness, injuries, and sudden death
• Animal welfare
• Detection of Frauds, Malicious poisoning
• Differentiation of different species of blood, serum, semen, hair, hide and bones

c. **Planning and management of veterinary/laboratory services**
• Management of veterinary investigation laboratory
• Planning and management of district veterinary services, livestock production services and livestock product marketing services
• Herd health management and disease prevention
• National disease control program
• Planning and management of veterinary projects