

**RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER**

**SCHEME & SYLLABUS FOR THE POST OF ASSISTANT CONSERVATOR FOREST  
& FOREST RANGE OFFICER GRADE I<sup>st</sup> COMPETITIVE EXAMINATION, 2018  
FOREST DEPARTMENT**

**OPTIONAL SUBJECT - VETERINARY SCIENCE**

**Unit- I Veterinary Anatomy & Histology**

Study and classification of bone, Classification of Skeletons, Classification of joints, structure and movements of joints, Classification of muscles, description of tendons and ligaments, Introduction, Structure of heart, Pulmonary and systemic circulation, lymphatic and venous systems. Central, peripheral and autonomic nervous system. Sense organs, Brain, spinal cord, bone marrow and cerebrospinal fluid, Introduction, topography of different organs of digestive, respiratory, urinary, endocrine, male & female reproductive systems of animals.

**Unit- II Veterinary Physiology and Biochemistry**

Properties of blood, metabolism and physiological functions, Heart, cardiac cycle, circulatory controls, blood pressure, Introduction and mechanism of muscle functions, phenomenon of fatigue, Structure and type of neurons, nerve action potential, functions of nervous system, Functional morphology and physiology of eye & ear, Digestion, absorption and metabolism of carbohydrate, fat and protein in animals, Excretory and Endocrine physiology, Reproduction, Growth and environmental physiology, Scope and importance of biochemistry, intermediary metabolism and analytical biochemistry.

**Unit- III- Livestock Production and Management**

Demographic distribution of Livestock and animals with special reference to Rajasthan, Breeds of livestock and poultry in Rajasthan, Fodder production and conservation. Different types of pastures & grasslands, their management and conservation of Fodder, Zoo animals production and management and animal welfare: Taxonomy of wild and zoo animals, status and conservation practices of wildlife, General livestock Production and management, Poultry production and management.

**Unit- IV-Animal Genetics and Breeding**

Principles of animal and population Genetics, principles of animal breeding, Overview of Mendelian principles, cytogenetics, forces changing gene and genotypic frequencies, Quantitative and qualitative genetics, concept of correlation and interaction between genotype and environment, Heritability, repeatability, genetic and phenotypic correlation.

## **Unit-V- Animal Nutrition**

Nutrients *vis-a-vis* animal production and health. Importance of minerals and vitamins in health and production, Classification & nutritional significance for animals, Processing of concentrate and roughages, antinutritional factors, Feed additives and their role in animal nutrition, Feeding standards, their use and significance, Balanced ration and its properties, Nutrient requirements for maintenance and production for various ruminants, Computation of ration for ruminant animals. Metabolic disorders and nutritional interventions, Nutrient requirements of birds, equines and swine. Formulation of ration as per BIS and ICAR specifications for poultry and monogastric animals. Nutrient requirements and Feeding of dogs and cats, Feeding of wild animals and birds in captivity, metabolic disorders and nutritional interventions.

## **Unit-VI - Veterinary Microbiology**

Classification, nomenclature, microscopy and micrometry of various bacteria, Pathogenesis, diagnosis and control of bacterial diseases caused by important pathogenic bacteria, General and systemic veterinary virology, structure and classification of viruses, viral pathogenesis, oncogenesis and immunopathology of viruses, Studies on general properties, antigens, pathogenesis, clinical signs, diagnosis, prevention and control of diseases caused by DNA and RNA viruses, Lymphoid organs, tissue and cells, types of immunity, mitogens and factors affecting immunogenicity. Theories of antibody production, antigen processing and presentation, complement system, auto immunity and immunotolerance, Introduction, Classification and properties of fungi. Epidemiology, Pathogenesis, diagnosis and control of important fungal diseases of animals.

## **Unit- VII- Veterinary Pathology**

Etiology, degeneration, necrosis, circulatory disturbances, disturbances in growth, inflammation, wound healing and immunopathology, Pathological changes affecting various systems of body of animals, Characteristics and classification of neoplasm, pathology of various types of tumors in animals, Haematology and urine analysis, biopsy and exfoliative cytology, Necropsy examination of different species of animals, veterolegal necropsy, Pathology of infectious and non- infectious diseases of domestic and wild animals and birds.

## **Unit-VIII- Veterinary Parasitology**

Types of parasites and their standard nomenclatures, immunity against parasitic infestations, Classification, morphology, life-cycle and diseases caused by various trematodes, cestodes and nematodes in animals and birds. Their prevention and control, Classification, morphology, Life-cycle and diseases caused by various arthropods and protozoan parasites in animals and birds. Their prevention and control.

## **Unit-IX- Veterinary Pharmacology and Toxicology**

General Pharmacology, sources and nature of drugs, pharmacokinetics and pharmacodynamics, drug interaction, Drugs acting on Autonomic nervous system, central nervous system and drugs acting on different body systems, Veterinary Chemotherapy, Introduction of chemotherapy, antimicrobial agents, miscellaneous agents, antifungal agents, anthelmintics, drug abuse in animals, Introduction, fundamentals and scope of toxicology, toxicity caused by metals, non- metals, poisonous plants, agrochemicals, fungal and bacterial toxins and venomous bites and stings.

## **Unit-X- Veterinary Public Health and Epidemiology**

Role of veterinarians in public health, principle and concept of food hygiene and safety. Milk hygiene and meat hygiene- concept and practices, Food born infections and intoxications associated with foods of animal origin. Food safety and standards, Act and regulations. Veterinary epidemiology: Components and aims of epidemiology, animal diseases forecast and strategies of disease management: Prevention control and biosecurity, Classification of zoonoses, emerging, re-emerging and occupational zoonoses. Role of domestic, pet and wild animals and birds in transmission of zoonoses. Epidemiology, clinical manifestations and management of various important zoonotic diseases. Environmental hygiene.

## **Unit-XI- Veterinary Surgery and Radiology**

Introduction and Classification of surgery, sterilization and disinfection, sutures, diagnosis and treatment of various basic surgical affections. Management of surgical shock and concept of fluid therapy, Veterinary Anaesthesiology, Development, terminology, Classification and indications of anaesthesia. Anaesthetic emergencies and management, Toxicity, antidote and reversal agents, General terminology, x-ray, contrast radiography, advanced diagnostic imaging tools- CAT scanning, MRI etc., Regional surgery of various parts and systems of the body of different species of animals, Classification and diagnosis of lameness, methods of therapy, fractures and techniques of immobilisation of fracture and their management. Rehabilitation and physiotherapy of orthopaedic patients.

## **Unit- XII- Veterinary Medicine**

Concept of animal diseases, diagnosis, differential diagnosis, treatment and prognosis of diseases, Etiology, diagnosis, treatment, prevention and control of various systemic diseases of animals and birds, Metabolic and deficiency diseases in animals and birds, Bacterial, viral, fungal and Parasitic diseases: Etiology, Epidemiology, clinical manifestations, diagnosis, treatment, prevential and control, Veterinary Jurisprudence, ethics and animal welfare.

### **Unit-XIII- Veterinary Obstetrics and Gynaecology**

Applied anatomy and embryology of female reproductive tract, oestrus cycle, Aberrations of ovulation, fertilization, infertility in various species of animals, Multiple ovulation and embryo transfer technology, invitro fertilization, Veterinary obstetrics in farm and pet animals, pregnancy diagnosis, Abortion, dystocia, obstetrical interventions, Veterinary andrology and Artificial insemination technique.

Note :- **Pattern of Question Paper**

- 1. Objective type paper**
- 2. Maximum Marks : 200**
- 3. Number of Questions : 120**
- 4. Duration of Paper : Three Hours**
- 5. All questions carry equal marks.**
- 6. There will be Negative Marking.**