RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS OF COMPETITIVE EXAMINATION FOR THE POST OF VETERINARY OFFICER (ANIMAL HUSBANDRY DEPARTMENT)

PART-A - 40 Questions

General Knowledge of Rajasthan

Unit-I

Language & Literature: Dialects of Rajasthani language, literature of Rajasthani language and folk literature. Religious Life: Religious communities, saints and sects in Rajasthan. Folk deities of Rajasthan. Performing Art: Classical music and classical dance, folk music & Instruments; folk dances & drama. Visual Art: Handicrafts of Rajasthan, historical architecture – forts, palaces and temples. Tradition: Costume and ornaments, social customs of Rajasthan. Festival and fairs in Rajasthan. Various tribes and their customs. Historical Sites and tourist places.

Geography of Rajasthan: Broad physical features- Mountains, Plateaus, Plains & Desert; Major rivers and lakes; Climate, Major soil types and distribution; Major Forest types and distribution; Demographic characteristics; Dairy farming, Desertification, Droughts & Floods, Deforestation.

Inhabitation and home tract of different breeds of livestock in Rajasthan. Animal fairs of Rajasthan. Common wild life species found in Rajasthan and places for their conservation.

PART-B -110 Questions

Unit-II

Structure and classification of bones, Joints and muscles. Gross anatomy, topography and histology of different organs of digestive, respiratory, urogenital, endocrine, cardiovascular, nervous systems of domestic animals and fowl. Study of basic tissues i.e. epithelial, connective, muscular and nervous tissues, blood and bone marrow. Introduction to embryology. Different germ layers and their derivatives. Development of organs of various systems and sense organs.

Unit-III

Formation and physiological functions of blood. Cardiac cycle. Physiological characteristic of mono gastric and poly gastric digestive system. Physiology of respiration in animals and birds. Regulation of growth. Thermoregulation in farm animals and birds. Structure of biological membranes and transport across membranes. Enzymes. Carbohydrate, fat and protein metabolism. Ammonia transport and urea cycle.

Unit-IV

Introduction, classification, nomenclature and general properties of bacteria, viruses and fungi. Pathogenicity, virulence, bacteraemia, septicaemia and toxaemia. Bacterial genetics, plasmids and antibiotic resistance. Isolation, growth, morphological, cultural, biochemical and antigenic characteristics and diseases of various bacteria, viruses and fungi in livestock and poultry. Basic concepts of Recombinant DNA Technology, molecular and biotechnological techniques. History of Immunology, Types of Immunity, Antigens, Antibody. Serological reactions, Complement system, Cytokines, Hypersensitivity, Autoimmunity, Immunotolerance.

Unit-V

Introduction, causes of disease, mechanism of cell injury, cellular degenerations, haemodynamic disorders, disturbances of growth, pigmentations. Inflammation, classification, various cell types and their functions, chemical mediators, cardinal signs, systemic effects. Wound healing. Pathology of autoimmune diseases. General characteristics and classification of neoplasms. Post-mortem techniques, Post-mortem changes, collection, preservation and despatch of morbid materials for diagnosis. Haematology, anticoagulants, interpretations of blood tests, urinalysis, biopsy, cytology. Pathology of diseases affecting various systems. Pathology of various bacterial, viral, fungal, mycoplasmal, parasitic and prion diseases of animals and poultry. Pathological changes in nutritional and metabolic diseases and heavy metal toxicities. Pathology of important diseases of Laboratory and Wild animals.

Unit-VI

Parasites of domestic animals, poultry and wild animals (morphology, taxonomy, biology, life cycles, host–parasite interactions, epidemiology, pathogenesis, zoonotic importance, diagnosis, management and integrated control measures), protozoa, helminths (trematodes, cestodes, nematodes) and arthropods of veterinary importance. Immunity against parasitic infections and infestations, antiparasitic drug resistance. Collection, preservation and examination of parasitic specimens from animals and the environment, preparation of smears, faecal examination, larval culture and identification of eggs, larvae, adult worms and arthropods using microscopic, serological and molecular techniques, integrated parasite management in livestock and companion animals.

Unit-VII

General Pharmacology (drug sources, nomenclature, pharmacokinetics, pharmacodynamics, adverse drug reactions, drug interactions), autacoids, drugs acting on the autonomic, somatic, central nervous systems, and various body systems (digestive, cardiovascular, respiratory, urogenital, endocrine, and skin). Veterinary Chemotherapy (antibacterials, anthelmintics, antifungals, antivirals, antitubercular drugs, anticancer agents, antiprotozoals, ectoparasiticides, antiseptics, disinfectants), indigenous medicinal plants, Veterinary Toxicology (classification of toxicants, diagnosis and treatment of poisoning, toxicity from metals, plants, agrochemicals, drugs, fungal/bacterial/plant/ animal toxins, venoms, food additives, residues of drugs and agrochemicals, environmental pollutants, and radiation hazards).

Unit-VIII

Veterinarians in public health, one health concept, concepts, general principles and applied aspects of milk, meat and environmental hygiene, food safety and public health. Concepts, principles and applied aspects of Veterinary epidemiology, zoonoses and zoonotic diseases, Emerging, re-emerging diseases, occupational health hazards, foodborne infections and intoxications.

Unit-IX

Basic principles of surgery. Types of wounds and wound healing. Sterilization and various methods of sterilization. Methods of haemostasis. Types of suture techniques and suture materials and its use. Basic Surgical affections- abscess, hematoma, cysts, tumours, necroses, and burns and its treatment. Fractures its classification and general principles of fracture repair. Application of external and internal immobilization for different bone fractures. Common anaesthesia and anaesthetic techniques used in domestic and wild animals. Anaesthetic monitoring, emergencies. Anesthetic toxicity and its reversal. Local anesthetic techniques and its indications. Radiation hazards and safety. Radiographic quality and factors affecting it. Contrast radiography. Introduction to advanced imaging tools. Types of lameness in domestic animals. Common surgical problems of head, neck, thorax and abdomen in domestic animals. Advances in surgery- **laparoscopic** surgery.

Unit-X

Concepts of diagnosis, differential diagnosis, treatment, prevention, control, prognosis etc., anamnesis, clinical procedures, modern diagnostic techniques, methods of clinical and special examination of animals including various body parts/organs. General systemic states, diseases monitoring and surveillance, population health. Collection, dispatch, preservation, processing, examination of clinical samples, various screening and diagnostic tests.

Aetiology, clinical manifestations, diagnosis, differential diagnosis, treatment, prevention and control of:

- *General and systemic diseases of animals and birds*- Diseases of digestive, respiratory, cardiovascular, uro-genital, nervous, haemopoietic, lymphatic and musculo- skeletal system, sense organs and skin diseases.
- *Metabolic disorders/production/endocrine and deficiency diseases of animals and birds*.
- *Infectious diseases of animals and birds- bacterial, fungal, rickettsial, viral and parasitic*.

Emergency medicine and critical care, clinical management of common poisonings, Alternative/integrated/ethno- veterinary medicine, Hospital setup, laboratory diagnosis and record keeping.

Veterinary jurisprudence, ethics and animal welfare-Vetero-legal aspects, Rules, regulations and laws of animal health, welfare and management, Laws relating to poisons and adulteration of drugs, Livestock importation act, animal insurance, Code of conduct and Ethics for veterinarians, Indian Veterinary Council Act, 1984, various aspects of animal welfare.

Unit-XI

Reproductive physiology and role of hormones. Oestrous cycle in different animal species and signs of oestrus. Cystic ovarian disease, Methods of pregnancy diagnosis in different species MRP. Infertility in animals. Parturition in animals, Diseases and accidents during gestation. Causes of dystocia in different animal species and their correction. Post partum complications in different animal species. Teratology. Procedures of semen collection, processing and artificial insemination in animals. Advanced reproductive techniques, like Oestrus synchronisation, ETT, IVF, GIFT, SCNT and Cloning etc.

Unit-XII

Livestock production systems of different agroclimatic zones. Body conformation and identification, dentition and ageing of animals. Transport of animals by different means. Common vices of animals, their prevention & care. Organic livestock production. Housing for various livestock species. Important breeds of livestock, poultry and pet animals. General management of farm animals, equines and swine. Present scenario of Indian poultry industry. Commercial poultry production and Hatchery management. Marketing of animals and avian products including value addition. Concepts of biosecurity, animal behaviour and welfare, economic traits of farm animals and poultry. Integrated farming system.

Unit-XIII

History of genetics and animal breeding. Cell division and gametogenesis. Classical mendelian genetics. Population genetics. Quantitative genetics. Cytogenetics. Basics of molecular genetics and techniques. Mutation and chromosomal aberrations. Types, bases and methods of selection. Mating systems- types, effects and uses. Concept of nuclear breeding schemes. Sire evaluation. Development of new breeds and strains. Conservation of germplasm. Current livestock and poultry breeding programmes in the state and country.

Unit-XIV

Importance of nutrients in animal production and health. Common feeds and fodders of Rajasthan, their classification, availability and nutritional importance. Measures of food energy.

Proximate and detergent system of analysis. Protein evaluation of feeds. Methods of improving nutritive value of low quality roughage. Processing of concentrates and roughages. Preparation, storage and conservation of livestock feed and fodders. Harmful natural constituents and common adulterants of feeds and fodders. Feed additives, supplements and growth stimulants in the ration of livestock and poultry. Measurement of digestibility and factors affecting. Feeding standards. Balanced ration. Nutritional requirement of farm animals, laboratory animals and poultry for maintenance and production. Formulation of ration of livestock and poultry for different phases of growth and production.

Unit-XV

Milk Industry in India. Composition, nutritive value and Physio-Chemical properties of Milk. Milk processing plant and its management. Organic milk products. Legal and BIS standards of Milk and Milk products. management of abattoirs, BIS Standards on organization and lay out of abattoirs. HACCP concept in abattoir management. Importance of wool, fur, pelt and speciality fibres processing. Retrospect and prospect of meat industry in India. Nutritive value of meat, fraudulent substitution of meat, preservation of meat. Physio-chemical and micro-biological quality of meat. Laws governing national, international trade of meat and meat products.

Unit-XVI

Concepts of extension education, sociology, community development and rural development. Steps in extension teaching. Characteristics and differences among communities. Operation flood. Central and state level agencies concern with livestock extension programmes. Dairy and poultry development programmes in India: completed and ongoing at central and Rajasthan level. Basic concepts of communication. Types and methods of communications. Livestock entrepreneurship. Livestock census and insurance schemes.

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Pattern of Question Papers:

1. Objective Type Paper
2. Maximum Marks: **150**
3. Number of Questions: **150**
4. Duration of Paper: **2.30 Hours**
5. All Questions carry equal marks
6. There will be Negative Marking