

# **ANIMAL HUSBANDRY AND VETERINARY SCIENCE**

## **(UG DEGREE STANDARD)**

**SUBJECT CODE: 296**

### **UNIT – I: GENERAL**

Role of livestock and their products in Indian economy and human health, current livestock programmes and policies of State and Nation – Economics of dairy, sheep, goat, poultry, pig and rabbit farming; constraints to the livestock development programs, common offences against animals – SPCA, Animal Welfare Board of India, NGOs.

### **UNIT – II: LIVESTOCK MANAGEMENT**

Common terms used in Animal Husbandry – Identification of age of animals – Livestock and poultry breeds and breed characters; housing systems, and requirements of space, ventilation, water, sanitation and waste disposal.

Management of milk, meat, egg and wool producing livestock, breeding bulls and draft animals and wild animals in captivity, farm records and their maintenance, systems and strategies for livestock improvement for enhancing productivity.

### **UNIT – III: LIVESTOCK NUTRITION**

Nutritional terms and definitions – Role of nutrition in health and production; classification and composition of feed and fodders including forest grasses; anti-nutritional factors and toxins in feeds and fodders; feeding standards and nutrient requirements of different categories of livestock / poultry and computation of rations.

Nutritional deficiency and its influence on livestock performance; feed supplements and additives; conservation and preservation of feed and fodders; economic utilization of agro by-products for feeding livestock – Utilisation of unconventional feeds – Wildlife nutrition.

Quality control of feed, feed block/baling, By-Pass Proteins and by-pass Fat, Feeding livestock during scarcity, Metabolic disorders in Livestock and Poultry, Processing of feeds and forage to improve nutritive value.

#### **UNIT – IV: LIVESTOCK BREEDING AND GENETICS**

Important breeds of cattle, buffalo, sheep, goat, pig and poultry with special reference to economic characters – Important species of wild animals and their breeding in captivity. Selection of Livestock for production, reproduction and disease resistance traits. Principles of genetics and basis of population genetics, genetic parameters. Nature of DNA and RNA-their models and functions; applications of recombinant DNA technology, cloning and marker Assisted selection and Cytogenetics. Animal breeding policies and programmes in state and Nation.

#### **UNIT – V: VETERINARY ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY**

Gross study of bones, joints and muscles of skeleton Gross study of heart and its conduction system. Gross study of organs of digestive, respiratory urinary and reproductive systems. Digestion, metabolism and absorption of carbohydrates, proteins and fats in simple stomach animals and ruminants – mechanism of respiration. General functions of blood (blood cells, plasma & serum) coagulation, cardiac cycle, Blood circulation, Blood pressure, renal function Hormonal control of Lactogenesis. Environmental factors affecting animal production – Environmental stress on animal performance – Green Houses Gases – Role of ruminants.

#### **UNIT – VI: VETERINARY MICROBIOLOGY, VETERINARY PREVENTIVE MEDICINE**

Bacteriology & Mycology: Classification - isolation, identification and culturing of bacteria and fungi -Methods of transmission of infection - Sterilization and disinfection - Antibigram. Virology: Classification, - cultivation, replication General characteristics of various families of RNA and DNA viruses. Immune system organs, tissues and cells; infection and immunity; type and grade of immunity, serological reactions and modern diagnostic techniques – vaccine.

Epidemiology - Concept, Scope, Objectives and Uses. Monitoring and surveillance-epidemiological disciplines. Pathogenesis, clinical signs, differential diagnosis, prevention and control of common bacterial, viral, fungal, rickettsial and parasitic diseases of livestock, poultry and pet animals including wild life species- Regional,

endemic, emerging and re-emerging important disease. Allergic skin tests and modern diagnostic techniques.

### **UNIT – VII: PATHOLOGY AND PARASITOLOGY**

Concept and causes of diseases in animals; general principles and procedures of necropsy; collection, preservation and dispatch of morbid materials for laboratory diagnosis, disease investigation; common pathological conditions seen in domestic, wild, zoo and laboratory animals and birds. Vetro-legal implications.

Classification of Parasites – Parasite and parasitism in animals; important morphological features, life-cycles, mode of transmission, pathogenesis, diagnosis, chemotherapy and general control measures of parasites associated with disease in animals, birds and zoo animals.

### **UNIT - VIII: PHARMACOLOGY**

Drug action – Pharmacokinetics (absorption, distribution, biotransformation and excretion), Pharmacodynamics – local and general anesthetics. Antibiotics and chemotherapy – Toxicology - Ethnoveterinary practices.

### **UNIT - IX: VETERINARY CLINICAL MEDICINE, VETERINARY GYNAECOLOGY AND OBSTETRICS AND VETERINARY SURGERY AND RADIOLOGY**

General and special clinical examination, etiology, clinical signs, pathogenesis, diagnosis, prevention and control of metabolic, deficiency diseases. Ethics and jurisprudence in domestic and wild animals.

Reproductive physiology; hormones and reproduction; Accidents of gestation, livestock fertility and infertility; artificial insemination; semen characteristics of different species of livestock and cryopreservation. Multiple ovulation and embryo transfer technology in livestock and zoo animals Reproductive disorders and their management.

General surgical principles – Pre and post-operative considerations, anesthesia, asepsis and anti-sepsis and sterilization; scope, history and development of veterinary

radiology; Imaging pathology of different parts of body-surgical emergencies – Intensive care – Physiotherapy – Diathermy.

### **UNIT- X: LIVESTOCK PRODUCTS TECHNOLOGY**

Ante mortem and Post mortem inspection – Objectives of meat inspection – Abattoir practices, methods of slaughtering and dressing; Meat Inspection Laws, utilization of by products; unsound meat and its disposal; quality control of meat and eggs and their products. Milk: Proximate Composition, milk collection, cooling / chilling and transportation; physio-chemical and nutritional characters of milk and milk products; processing of raw milk and production of market milk. Condensed and dried milk, special milk and Indian Dairy Products - Packaging and storage.

Cleaning and sanitization of dairy equipments and plants; role of micro-organisms in milk and milk products; legal standards and quality assessment of milk and milk products-role of milk and milk products, meat and egg in human nutrition – Detection of adulterants in milk. Good Manufacturing Practices (GMP) in dairy and Hazard analysis in critical control point (HACCP) in dairy Processing. FSSAI laws.