

ANIMAL HUSBANDRY AND VETERINARY SCIENCE—CODE NO. (19)**Animal Husbandry :**

1. **General.**—Role of Livestock in Indian Economy and human health. Mixed farming. Agroclimatic zones and livestock distribution. Socio-economic aspects of livestock enterprise with special reference to women.

2. **Genetics and Breeding.**—Principle of genetics, chemical nature of DNA and RNA and their models and functions. Recombinant DNA technology, transgenic animals. Multiple ovulation and embryo-transfer.

Cytogenetics, Immunogenetics and biochemical polymorphism and their application in animal improvement. Gene actions. Systems and strategies for improvement of livestock for milk, meat, wool production and draught and poultry for eggs and meat. Breeding animals for disease resistance. Breeds of livestock, poultry and rabbits.

3. **Nutrition.**—Role of nutrition in animal health and production. Classification of feeds, Proximate composition of feeds. Feeding standards, Computation of rations. Ruminant-nutrition. Concepts of total digestible nutrients and starch equivalent systems. Significance of energy determinations. Conservation of feeds and fodder and utilization of agro by products. Feed supplements and additives. Nutrition deficiencies and their management.

4. **Management.**—System of housing and management of livestock, poultry and rabbits. Farm records. Economics of livestock, poultry and rabbit farming. Clean milk production. Veterinary hygiene with reference to water, air and habitation. Sources of water and standards of potable water. Purification of water. Air changes and thermal comfort. Drainage systems and effluent disposal. Biogas.

5. **Animal Production.**—(a) Artificial insemination, fertility and sterility. Reproductive physiology, semen—characteristics and preservation. Sterility—its causes and remedies.

(b) Meat, eggs and wool production. Methods of slaughter of meat animals, meat inspection, judgement, carcass characteristics, adulteration and its detection processing and preservation. Meat products, quality control and nutritive value, by-products. Physiology of egg production, nutritive value, grading of eggs preservation and marketing. Types of wool, grading and marketing.

6. **Veterinary Science.**—(i) Major contagious diseases affecting cattle, buffaloes, horses, sheep and goats, pig, poultry, rabbits and pet animals—Etiology, symptoms, pathogenicity, diagnosis, treatment and control of major bacterial viral, rickettsial and parasitic infections.

(ii) Description, symptoms, diagnosis and treatment of the following :—

(a) Production diseases of milch animals, pig and poultry.

(b) Deficiency diseases of domestic livestock and birds.

(c) Poisonings due to infected/contaminated foods and feeds, chemicals and drugs.

7. Principles of immunization and vaccination.—Different types of immunity, antigens and antibodies. Methods of immunization. Breakdown of immunity, Vaccines and their use in animals. Zoonoses, Foodborne infections and intoxications, occupation hazards

8. (a) Poisons used for killing animals—euthanasia.
- (b) Drugs used for increasing production/performance efficiency and their adverse effects.
- (c) Drugs used to tranquilize wild animals as well as animals in captivity.
- (d) Quarantine measures in India and abroad. Act, Rules and Regulations.

9. Dairy Science.—Physico—chemical and nutritional properties of milk.

Quality assessment of milk and milk products, Common tests and legal standards.

Cleaning and sanitization of dairy equipment. Milk collections, chilling, transportation processing, packaging, storage and distribution. Manufacture of market milk, cream butter, cheese, ice-cream, condensed and dried milk, by products and Indian Milk products.

Unit operations in dairy plant.

Role of micro-organisms in quality of milk and milks products.

Physiology of milk secretion.