UNIT-IV:Zoonotic diseases through milk and meat, Zoo animal health. Source and nature of drugs, pharmacokinetics, Chemotherapy-sulpha drugs, antibiotics, mechanism and problem of drug resistance. Drug allergy, important poisonous plants, toxicity of important agro-chemicals and their detoxification, drugs action on different body systems.

Code 14: MAJOR SUBJECT GROUP - ANIMAL SCIENCES

(**Sub-Subjects**: **14.1**: Animal Genetics & Breeding, **14.2**: Animal Nutrition, **14.3**: Veterinary Physiology, **14.4:** Livestock Production and Management, **14.5**: Livestock Products Technology, **14.6:** Poultry Science,**14.7**: Veterinary Extension Education)

UNIT-I: Principles of animal genetics, cell structure and multiplication. Mendel's laws, principles of population genetics, concept of heredity, heterosis and mutation, principles of evolution, principles of molecular genetics, genetic code, quantitative and qualitative traits. Selection of breeding methods in livestock and poultry. Population statistics of livestock.

UNIT-II: General nutrition, proximate principles, carbohydrates, proteins and fats their digestion and metabolism in ruminants and non-ruminants. Energy partition- measures of protein quality. Water, minerals, vitamins and additives, feeds and fodders and their classification. Common anti-nutritional factors and unconventional feeds. Hay and silage making. Grinding, chaffing, pelleting, roasting, feed block. Feed formulation principles. Digestion-control motility and secretion of alimentary tract. Mechanism, natural and chemical control of respiration, gaseous exchange and transport, high altitude living, physiology of work and exercise. Cardiac cycle, natural control of cardiovascular system. Smooth and skeletal muscle contraction. Blood coagulation. Physiology of immune system. Male and female reproduction including artificial insemination, in-vitro fertilization, cryo-preservation. Excretory system.

UNIT III: General concepts of livestock production and management, status of dairy and poultry industry, impact of livestock farming in Indian agriculture. Livestock housing, production and reproduction management, lactation management, breeding programmes for livestock and poultry. Composition, quality control and preservation of livestock products, methods of processing and storage livestock products. International Trade/WTO/IPR issues related to livestock products.

UNIT IV: Concept of sociology, differences between rural, tribal and urban communities, social change, factors of change. Principles and steps of extension education, community development– aims, objectives, organizational set up and concept evolution of extension in India, extension teaching methods. Role of livestock in economy. Identifying social taboos, social differences, obstacles in the way of organizing developmental programmes. Concept of marketing, principles of co-operative societies, animal husbandry development planning and programme, key village scheme, ICDD, Gosadan, Goshala, Role of Gram Panchayat in livestock development. Basics of statistics, data analysis and computational techniques.

Code 15: MAJOR SUBJECT GROUP - FISHERIES SCIENCE

(**Sub-Subjects**: **15.1**: Fisheries Resource Management, **15.2**: Aquaculture, **15.3**: Fish Processing Technology, **15.4**:Fish Physiology & Biochemistry **15.5**: Aquatic Animal Health Mgmt., **15.6**: Fisheries Extension, **15.7**: Aquatic Environmental Management, **15.8**: Fish Genetics and Breeding,**15.9**: Fish Nutrition & Feed Technology **15.10**: Fisheries Economics, **15.11:** Fishing Technology and Engineering, **15.12:** Fish Biotechnology)

UNIT-I: Classification and taxonomical characteristics of cultivable fisheries, crustaceans and molluscs. Fresh water, brackish water and marine fishery resources of India, marine fisheries of the world. Estuarine, lacustrine, brackish water and pond ecosystem. Population dynamics, fish stock, abundance methods and analysis. Conservation and management of fishery resources. Fisheries legislations and law of the Seas. Impact of over exploitation and climate change on fisheries resources.