

28. SYLLABUS FOR COMPETITIVE EXAMINATION FOR THE POST OF TEACHING ASSOCIATE IN ANIMAL SCIENCE

Unit 1 : General

Present status and future prospects of livestock and poultry development in India and special focus on Rajasthan. Effect of industrialization and mechanization of agriculture in livestock sector.

Breed study on the aspect of phenotype appearance, lactation length, milk production and adaptation of following breeds -

Cattle- Gir, Sahiwal, Haryanwi, Mewati, Tharparkar, Nagori and other common breeds. Buffalo- Murra, Jafarawadi, Bhadawari, Surti and Mehasana.

Sheep-Malpura, Chokala, Magra, Bikaneri and Pugal.

Goat- Beetal, Jamanapari, Black Bangal, Pashmina Kashmiri. Camels- Bikaneri, Jaisalmeri, Kutchi, Mewari and Jalori.

Poultry- WLH, Rhode Island Red, Sussex, Cornish Windottle, Menarka, Australorp, Asiatic breed Asil, Kadaknath, Chatgaon, exotic and other famous breeds like Holestein Friesian, Jersey, Red Sindhi, exotic sheep breed, Rambouillet, Merino etc. Various livestock programmes conducted by ICAR in India and Rajasthan. Domestication and behavior of animals. Mating behavior of animals and poultry. Social order in farm animals. Adaptation of different breeds of livestock and poultry cloning in animal and advances in Embryo Transfer Technology (ETT) in cattle.

Unit 2: Feeding Management-

Nutrients and their functions. Nutritional requirements and feeding managements of different categories of livestock and poultry. Feed additives including antibiotic and probiotic feeding in farm animals and poultry. Formulation and compounding of rations for various categories of livestock and poultry. Least cost ration formulation. Systems of feeding livestock and poultry. Feeding standards for livestock and poultry. Feed conversion efficiency of various categories of livestock and poultry. Processing and storage of conventional and non-conventional feed ingredients. Agro-industrial by-products in animal and poultry feeds. Feeding of various categories of animals on TDN/DCP & Energy based.

Unit 3 : Reproduction Management-

Reproductive systems of farm animals and poultry. Climate and nutrition affecting reproductive performance in farm animals. Importance of early pregnancy diagnosis. Methods of heat detection. Artificial insemination. Oestrus prediction and synchronization. Causes of disturbed fertility and its prevention in farm animals. Factors affecting reproductive efficiency. Summer and winter management problems and their solutions.

Unit 4: Shelter Management-

Housing systems, selection of site and lay out of animal and poultry houses. Space requirement for livestock and poultry. Housing designs in different agro-climatic regions. Macro and micro-climatic changes affecting designs of animal and poultry houses. Construction of cheap animal and poultry housing utilizing local resources. Automation in livestock farming. Disposal of animal wastes under urban and rural conditions. Disposal of carcasses. Open and close housing TXT and FFX system with merits and demerits.

Unit 5: Health Management-

General approach to livestock health programmes. Prevention of diseases. Hygiene and sanitation on animal and poultry farm. Symptoms of illhealth, important infectious diseases of livestock and poultry and their control.

Vaccination schedules in animals and poultry. Internal and external parasites and their control. Accidental health disorders and their control. Common disinfectants used on animal farms. Concept of first aid at farms. Segregation and quarantine management for large animals and birds. Quarantine Act, Zoonotic diseases, labour health programme.

Unit 6: Animal Husbandry and Management of farm animals-

Role of livestock in Indian Economy with special reference to Rajasthan. Animal Husbandry in India- present and future, Cattle, buffalo, sheep, goat, camel production trends and factors affecting them. Identification, castration, dehorning, ageing, handling and restraining of farm animals, milk and its composition, clean milk production, hormonal regulation of lactation. Care of the cow and calf during and after parturition. Management strategies for reducing mortality in farm animals. Management to improve productive and reproductive efficiency in livestock.

Unit 7: Production and Management of Poultry-

Brooding of chicks. Management of growing, laying and breeding flocks. Shelter management. Biosecurity and environmental considerations. Cage layer management and well being of poultry. Light management in poultrysheds. Hatchery business management. Management during stress. Chick sexing. Maintenance of poultry farm records. Health and sanitation problems. Prevention and disease control. Poultry shows. Handling care of table eggs and processing of birds for meat. Moulting in Poultry and effect of lighting on Production.

Unit 8: Animal Nutrition and Conservation-

Composition and classification feed stuffs, roughages. Nutritive value of feeds and fodders, conservation and preservation of feeds and fodders, annual and perennial fodder crops, pasture development and management. The digestive organs, digestive process of Ruminants. Desirable characteristics of a ration, computation of ration for cattle and buffaloes, balanced ration. Strategies for round the year fodder production.

Unit 9: Breeding Management-

Basic principles of inheritance. Concept of heritability, repeatability and selection. Important methods of selection and systems of breeding in farm animals and poultry. Importance of maintaining breeding records and their scientific interpretation.

Unit 10: Economics and Marketing of Livestock and Poultry and their products

Economic principles as applied to livestock and poultry production. Production functions. Farm size, resources and product combinations. Cost concepts. Effect criteria in use of resources in livestock production. Maintenance of evaluation of different production records. Insurance and financing of livestock enterprises. Project formulation for setting up livestock and poultry farms. Different approaches to marketing of livestock and poultry products. Present status of cattle fairs and methods of selling livestock in India and Rajasthan. Market news and information. Determination of prices of livestock and poultry products. Vertical integration in livestock products industries. Basic principles of inheritance. Concept of heritability, repeatability and selection. Important methods of selection and systems of breeding in farm animals and poultry. Importance of maintaining breeding records and their scientific interpretation.