Swami Ramanand Teerth Marathwada University, Nanded

Syllabus
for Ph. D. Entrance Test

Subject :- Dairy Science

Section - B

Multiple choice questions will be related to the following topics.

- Common terminologies, abbreviations and formulae use in animal husbandry and Dairy Science.
- Role of Government, Non-government and co-operative organizations in Indian livestock and dairy development.
- Physical, Functional characteristics and distribution of livestock breeds in India.
- Livestock economics and role of livestock in Indian Economy.
- Livestock genetics and breeding.
- Principles and practices of farm animal management.
- Digestion, metabolism of nutrients, digestibility coefficient in farm animals.
- Livestock feeds, their evaluation and feeding practices.
- Reproduction in farm animals.
- Biotechnological applications in farm management, nutrition and reproduction.
- Bio-synthesis and study of milk.
- Procurement, processing, distribution and marketing of milk.
- Classification, manufacturing and marketing of various types of indigenous and western dairy products.
- Legal standards and certifications for milk and milk products.
- Dairy plant – Layout, specifications and management.
- Recycling of farm and dairy wastes.
- Pollution control in farms and dairy plants.

Ph. d. Entrance test, Subject – Dairy Science.

Unit – I

Livestock production and management.

- Taxonomical classification.
- Livestock breeds and population distribution.
- Different schemes and plans for livestock development
- Principles and practices of management.

Unit – II

Farm animal nutrition.

- Anatomy and physiology of ruminants digestive system
- Nutritional requirements for maintenance, growth and production.
- Types of feeds and fodders.
- Feeding standards, computation of ration.

Unit – III

Animal Reproduction and Breeding.

- Anatomy and physiology of reproductive system
- Puberty estrus cycle, pregnancy, parturition.
- Fertility, sterility, breeding, efficiency.
- Structure and function of gene.
- Variation, selection and breeding systems.

Unit – IV

Biotechnological applications in nutrition & reproduction

- Biotechnological applications and recent trends in animal nutrition.
- Biotechnological applications in animal reproduction AI, ETT, estrus synchronization, super ovulation, super foetation, cloning.

Unit – V

Biosynthesis and study of milk

- Biosynthesis of milk and secretion
- milk composition and study milk constituents
- Properties and nutritive value of milk.
- Factors affecting quality and quantity of milk.

Unit – VI

Quality control management, clean milk production and processing

- Clean and safe milk production, health hazards, microbial significance in milk
- Legal standards for milk.
- Market milk: procurement and processing, packaging and distribution.

Unit – VII

Study of milk products

- Indigenous dairy products : classification, manufacturing of milk based products, khoa and channa based products.
- Western dairy products : classification, manufacturing of Ice cream, cheese, butter, butter oil, WMP, SMP
- Condensed and evaporated milk.
- Milk by-products : casein, Lactose, WPC

Unit – VIII

Milk and milk products marketing, co-operation and business management

- Marketing of milk and milk products.
- Pricing policy of milk
- Marketing channels
- Demand –types, forecasting of demands
- Entrepreneurship opportunities, development
- Role of co-operation in Indian Dairy Development
- Structure and functions of co-operative organizations

Unit – IX

Dairy engineering and plant management

- ❖ Plant layouts, layout procedures
- ❖ Different dairy engineering materials, their properties.
- ❖ Dairy waste recycling
- ❖ Pollution control

Unit – X

Dairy plant equipment

- ❖ Important dairy equipment designs.
- ❖ Study of heat exchanges, vats, fillers, separators, homogenizers, storage tanks, Conveying systems, can washers, bottle washers, spray and drum driers, churner, polypack, tetra packs, capping unit.
- ❖ Dairy plant maintenance, repairs and replacements.
- ❖ Inspection schedule.

***