

**DR. BABASAHEB AMBEDKAR
MARATHWADA UNIVERSITY,
AURANGABAD**



**Syllabus
for
Ph.D. Entrance Test**

Subject : Dairy Science & Technology

Section – B

Multiple choice questions will be related to the following topics.

- Common terminologies, abbreviations and formulae use in Dairy Science & Technology
- Dairy development in India, distribution of livestock breeds in India & Bio-synthesis of milk.
- Procurement, processing, packaging, distribution of milk.
- Classification, technology of manufacturing of various types of indigenous & western dairy products.
- Food safety act, legal standards and certifications for milk and milk products.
- Quality assurance & control
- Dairy & food engineering, equipment and utilities
- Dairy plant layout and wastewater treatment

**Ph.D. Entrance test,
Subject – Dairy Science & Technology**

Unit – I
Livestock production, Animal nutrition & reproduction.

- Dairy development in India
- Livestock breeds and population distribution
- Principles and practices of management.
- Biosynthesis of milk and secretion
- Anatomy and physiology of ruminants digestive system
- Types of feeds and fodders
- Animal reproduction and breeding

Unit – II
Chemistry & Microbiology of milk

- Types of milks, composition and study milk constituents
- Physico chemical properties and nutritive value of milk.
- Common microorganisms found in milk, growth curve
- Factors affecting quality and quantity of milk

Unit – III
Market Milk Industry

- Collection system of milk , receiving of milk, platform tests
- Filtration, clarification, bactofugation and centrifugal separation of milk
- Homogenization, pasteurization, packaging and distribution of milk
- Sterilization, UHT, aseptic packaging
- Advances in dairy processing , ultra filtration etc
- Food safety, quality assurance & Legal standards for milk.

Unit – IV
Indian and Western Milk Products

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

- Packaging materials for milk & milk products
- Rheology of dairy products
- Legal standards & food labelling for dairy products

Unit – V

Dairy and Food Engineering

- Materials and sanitary features of dairy & food equipments, CIP & SIP
- Study of storage tanks, conveying systems, can washers, bottle washers, heat exchanges, vats,
- Study of filters, separators, homogenizer, pasteurizers, sterilizers, spray and drum driers, butter churn, CBMM, packing machine.
- Dairy plant utilities: Boiler, refrigeration, electrical machines, Air compressors
- Dairy plant maintenance & repairs , preventive maintenance & Inspection schedule
- Dairy Plant layout & wastewater treatment COD, BOD etc

REFERENCES:

1. Outlines of Dairy Technology by Sukumar De, (Oxford University press)
2. Text Book of Animal Husbandry by G. C. Banerjee
3. Technology of Indian milk products by R.P. Aneja.
4. Recent Trends in Dairy and Food Processing edited by A. S. Khøjare, Paithani Prakashan, Aurangabad
5. Dairy Technology & Engineering by H.G. Kessler
6. Dairy Plant Engineering & Management by Tufail Ahmed
