

**SRI VENKATESWARA UNIVERSITY:TIRUPATI**  
**B.VOC. HONOURS PROGRAMME IN HORTICLUTURE**  
**MINOR: DAIRY AND ANIMAL HUSBENDARY**  
**FIRST YEAR – SECOND SEMESTER**  
**UNDER CBCS W.E.F.2023-24 AY Onwords**

**MINOR PAPER-I: MILK PRODUCTION MANAGEMENT, DAIRY PLANT DESIGN, AND DAIRY DEVELOPMENT**

**Credits -3**

**Learning outcomes:**

After completion the course student is able to

- Significance of milk production, known about nutrient requirements for growth and milk production.
- Improve the practical knowledge and understand and know about design and construction of dairy milk.

**SYLLBUS:**

**Unit-I** **09 h**

Distinguishing characteristics of India and exotic breeds of dairy animals and their performance. Management of lactating and dry cows and buffaloes. Milk production in national and international level, Methods of milking, milking procedure and practices for quality and safety of milk production. Dairy farm records and their maintenance.

**Unit-II** **09 h**

Feed nutrients required by animal body. Feed resources for milk production and their nutritive values. Nutrients requirements for growth and milk production. Feeding standards, Structure and function of mammary system. Price determination and pricing policy of milk products in organized and unorganized sectors of dairy industry.

**Unit-III** **09 h**

Quality assurance and total quality management in dairy industry. Preparation and standardization of reagents required in the analysis of milk and milk products. Sampling procedures; labeling of samples for analysis; choice of analytical tests for milk and milk products for chemical analysis and instrumental methods of analysis.

**Unit-IV** **09 h**

Chemical quality of water in dairy industry. Calibration of dairy glassware- including butyrometer, pipettes, burettes, hydrometers, lactometers and thermometer. Testing methods for the detection of adulterants, preservatives and neutralizers in milk and milk products. Environmental contaminants such as pesticides, antibiotics, heavy metals in milk and milk products and their chemical testing methods.

#### **Unit- V**

**09 h**

Brief explanation of Dairy Plant design and layout: Types and Classification of dairy plants, location, Selection of site, Significance of Building planning, Dairy plant design, Arrangement of equipment, Milk piping etc., Building construction materials, Floors for different section of dairy. Foundations, walls doors and windows. Other design aspects: Drains and drain layout for small and large dairies. Ventilation, fly control, Mold prevention, illumination in dairy plants.

### **MINOR PEPAR**

#### **Practical Paper-I: MILK PRODUCTION MANAGEMENT, DAIRY PLANT DESIGN, AND DAIRY DEVELOPMENT**

**Hours: 30**

**Marks: 50**

**Credits: 01**

1. Calibration of dairy glass ware - hydrometers – butyrometer
2. Calibration of dairy glass ware – volumetric flasks, burettes and pipettes
3. Preparation and standardization of dairy reagents – alkaline and acids
4. Preparation and standardization of dairy reagents – sodium thiosulphate and silver nitrate
5. Preparation and standardization of dairy reagents – Fehling and EDTA solution
6. Preparation and standardization of dairy reagents – Gerber's acid
7. Testing of amyl alcohol for fat estimation
8. Chemical analysis of permissible additive in milk
9. Chemical analysis of detergents and sanitizers
10. Analysis of market samples milk and milk products
11. Determination of temporary and permanent hardness of water

12. Estimation of available chlorine in bleaching powder

**MINOR PAPER-I: MILK PRODUCTION MANAGEMENT, DAIRY PLANT DESIGN, AND  
DAIRY DEVELOPMENT**

**MODEL QUESTION PEPAR**

Time: 1½ Hours

Max. Marks: 75

**PART -A**

Answer any FIVE questions, each question carries 5 marks. (5x5=25)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

**PART – B**

Answer **ALL** of the following Question. (5x10=50)

11. a)

Or

b)

12. a)

Or

b)

13. a)

Or

b)

14. a)

Or

b)  
15. a)

Or

b)