

## SEMESTER-II (Pool-A)

**COURSE NAME : ANALYSIS OF MILK AND MILK PRODUCTS**

**(CHOI-A16)**

**Number of Credit: - 02**

**Maximum marks: 50**

**Contact Hours/Week : 04 Hours/Week**

**Total Hours/Semester: 60 Hours**

**Duration of Examination: 04 Hours**

**Nature of Examination : No Semester Examination at University level.**

Only Internal Examination at Department/College level.

### **Distribution of Marks:**

<b>S. No.</b>	<b>Name of Exercise</b>	<b>Marks</b>
1.	Exercise No. 1.	15
2.	Exercise No. 2.	15
3.	Practical Record	05
4.	Good Laboratory Skills and Regularity in Practicals	05
5.	Comprehensive Viva-voce	10
<b>Total Marks</b>		<b>50</b>

### **Theory:**

#### **Dairy Industries in India:**

Introduction of white revolution. Importance of dairy industry. Opportunities of employment in the Dairy Industry.

#### **Basics on Milk:**

Definition of milk, composition and physico-thermal property of milk. Collection of raw milk, Method of Sampling of raw milk. Plat form test. Quality of raw milk. Different products made from the milk. Pasteurization and Sterilizations of milk. UHT Processing of milk. Methods for production of different types of milks - pasteurized, standardized, toned, double toned, flavored milk. Ingredients of special, Evaporated fermented and concentrated milk Products.

#### **Overview of Food Spoilage:**

Bacterial and fungal food spoilage. Main causes of milk spoilage. Preventions of milk and milk products from spoilage.

### **Practical:**

1. Preparation of Sample of Milk
2. Determination of Fat and SNF
3. Determination of pH of Milk
4. Determination of Acidity of Milk
5. Detection and Quantification of Cane Sugar
6. Detection and Quantification of Starch in Milk
7. Detection of Added Urea in Milk
8. Detection of Formalin in Milk
9. Detection of Hydrogen Peroxide in Milk

10. Detection of Sulfate, Nitrate, Common Salts, Detergent, Vegetable Oil in Milk
11. Detection of Dextrin / Maltodextrin in Milk
12. Detection of Presence of Soymilk in Milk
13. Detection of Cheese Whey Adulteration in Milk
14. Test for Presence of Skimmed milk Powder in Natural milk (Cow, buffalo, goat, sheep)
15. Test for Detection of Gelatin in Milk
16. Determination of Fat in Milk by Gerber Method
17. Study of chemical composition of goat, sheep, buffalo and cow milk.
18. Preparation of Cream; Determination of Fat in Cream by Rose Gottlieb Method and Werner Schmidt Method
19. Preparation of Cream Powder.
20. Determination of Moisture, Fat Content in Cream Powder
21. Determination of Milk Protein in Milk Solids not Fat of Cream Powder As per AOAC Method
22. Determination of Fat, Starch and Total Solids in Dahi
23. Determination of Moisture, Fat and Starch in Channa/Paneer

#### **Suggested Reading:**

- Sukumar, Dc. (2005) Outline of Dairy Technology. Oxford Univ. Press, New Delhi
- Bhandari, V., (2001) Ice cream Manufacture and Technology. Tala Me Graw-Hill publishing Co, Ltd, New Delhi.
- Arbuckle, W.S., (1972) Ice Cream, A, VI publication, Westport. Aulhor, La Grange
- Illinois Hall, C.W. and Hedrick. T.ly (1971) Drying of milk and milk products, AVI publishing Co, Weeport.
- Sangu, K.P.S (2002) Dairy Processing Technology

#### **Reference Books:**

- Milk Testing, J.G. Davis
- Dairy Microbiology, K.C. Mahanta
- Dairy Bacteriology, Hammer
- Fundamentals of Dairy Microbiology, J.B. Prajapati
- Standard Methods for Examination of Dairy Products, Gary H. Richerdson
- Market Milk Industry, C.L. Rhodhouse & J.L. Henderson.
- Comprehensive Dairy Microbiology, Yadav, Batish & Grover.
- A Text Book of Animal Husbandry, J.C. Banerjee
- The Fluid Milk Industry, Handerson.

