

**Ph.D. IN DAIRY SCIENCE AND TECHNOLOGY
(PHDDR)**

Term-End Examination

December, 2015

**RDR-006 : DAIRY BY-PRODUCTS TECHNOLOGY
AND PROCESSING**

Time : 3 hours

Maximum Marks : 100

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- Note :** (i) *Attempt any five questions.*
(ii) *All questions carry equal marks.*
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1. (a) Describe Physico-Chemical Characteristics of different types of whey. **10**
(b) Describing the need and importance of its utilization, discuss the present status of whey production and its utilization. **10**
2. Briefly describe the manufacturing process of good quality sodium caseinate on large scale. **20**
3. Describe the application of membrane technology in the processing and utilization of dairy by-products. **20**
4. Describe different types of membrane configurations. Also briefly discuss the advantages and disadvantages of each one. **20**
5. What is the importance of demineralization of whey ? Describe ion exchange process of demineralization with all technical details. **20**

6. Describing various physico-chemical properties of different types of buttermilk, discuss briefly its uses. 20
7. Write short notes on **any four** of the followings : 20
- (a) Lactic Casein
 - (b) Emulsification property of Casein
 - (c) Production of fruit beverage from whey
 - (d) Utilization of ghee residue
 - (e) Fouling of membranes
 - (f) Heat gelatine of whey proteins
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