

Ph.D in DAIRY SCIENCE AND TECHNOLOGY

Term-End Examination

December, 2014

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

Time : 3 hours

Maximum Marks : 100

Note : Attempt any five questions. All questions carry equal marks .

1. (a) Give the composition and nutritive values of important dairy by-products. What are the value added products which could be developed from these by-products? **10**
- (b) Describe technological developments in processing and utilization of by-products. **10**
2. (a) Characterize important functional properties of casein and whey proteins and describe their application in preparation of functional dairy foods. **10**
- (b) Describe the steps involved in manufacture of whey protein isolates and enumerate its important functional properties. **10**
3. (a) What are different types of membrane processing techniques and their respective uses ? Describe the factors affecting flux and efficiency of membrane. **10**

- (b) Explain the principle and process of ultra-filtration process and its application in dairy industry. 10
4. (a) Explain how composition and properties of various milk constituents affect fouling of membranes ? 10
- (b) Give the principle, operational details and industrial potential of different processes used for demineralization process in dairy industry. 10
5. (a) Describe the scope of application of membrane processing in the production of indigenous dairy products and special foods with examples. 10
- (b) What are the environmental implications of whey or dairy waste ? Describe the industrial process for obtaining purified lactose. 10
6. (a) Enumerate the techniques for identifying membrane fouling and specify the factors affecting fouling of membranes. 10
- (b) Describe the steps involved in cleaning and sanitization of membrane systems. 10
7. (a) Explain different configuration of membrane and their respective uses. 10
- (b) Describe the advantages and disadvantages of different types of membranes. 10
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