

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

**Term-End Examination**

**June, 2015**

00410

**RDR-007 : ADVANCES IN CHEMISTRY OF  
MILK PROCESSING**

*Time : 3 hours*

*Maximum Marks : 100*

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

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1. (a) Describe the chemical changes in milk proteins and protein – protein interaction during the processing of milk. 10
- (b) What are the desirable results of the changes caused in milk proteins due to heating and homogenization ? 10
2. (a) How is Maillard browning in milk influenced by different factors ? 10
- (b) How can Maillard browning and age-gelation in evaporated milk be minimised with the addition of stabilizers ? 10

3. (a) Explain the changes in Fat globule membrane caused due to homogenization. 10
- (b) How is dry texture in ice-cream imparted with the use of commercial emulsifiers? 10
4. (a) Why is milk preferred as a vehicle for fortification? 6
- (b) Which are the nutrients generally used for fortification of milk? What are the problems encountered during fortification of each of these nutrients? 14
5. (a) Describe in detail the enzymatic and non-enzymatic phases of Rennet coagulation of milk. 14
- (b) How is Rennet curd different from acid curd? 6
6. (a) Which are the bioactive compounds formed during fermentation of milk? 10
- (b) Which milk constituent is involved in cold agglutination? How is it influenced due to processing? 10
7. Write short notes on any *four* of the following:  $4 \times 5 = 20$
- (a) High pressure processing of milk
- (b) Pesticide residues in milk
- (c) Probiotic and Prebiotic in milk
- (d) Functional foods
- (e) Polyphenols in milk
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