

00382

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

**Term-End Examination**

**June, 2016**

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

*Time : 3 hours*

*Maximum Marks : 100*

**Note :** (i) *Attempt any five questions.*

(ii) *All the questions carry equal marks.*

1. Draw HCT/pH curves for fluid and concentrated milk from cow and buffaloes. How type of HCT/pH curve influence the selection of stabilizers ? 10+10=20
  
2. Give the mechanism of action of emulsifiers during freezing of ice-cream mix. In spite of their adverse effect on the emulsification of milk fat why these emulsifiers are used in ice-cream ? 10+10=20
  
3. (a) Write the favourable effects of protein denaturation during heating of milk on the functional properties of whey proteins in milk. 10  
(b) What are the desirable and undesirable effects of MSNF on the quality of ice-cream ? 10

4. (a) How antibiotics and pesticides get entry into milk ? Describe their harmful effect on human health. 10
- (b) Why milk is considered suitable vehicle for fortification of calcium ? What undesirable influence is caused by the calcium in milk ? 10
5. (a) Describe the status of bioactive peptides in fermented milk. 10
- (b) Is milk a functional food ? Support your answer with examples. 10
6. (a) Describe the chemistry involved and merits of high pressure processing of milk. 10
- (b) Define Probiotics and Prebiotics and their beneficial role in human health. 10
7. Write short notes on **any four** of the following : 4x5=20
- (a) Polychlorinated biphenyls (PCB's) in milk
- (b) Radionuclides
- (c) Organic foods
- (d) Protein hydrolysates
- (e) Milk fat replacers
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