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RDR-005

Ph.D in DAIRY SCIENCE AND TECHNOLOGY

00100

Term-End Examination

December, 2014

RDR-005 : DEVELOPMENT IN DAIRY PROCESSING

Time : 3 hours *Maximum Marks : 100*

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

1. (a) Explain principle and operational aspect of important thermal processing techniques used for milk and milk products. Also explain the methods for determining lethality of thermal processing. 10

(b) Describe principle and systems for application of High Hydrostatic processing in Dairy Industry. 10

2. Enumerate different types of UHT plants. Explain the prospects and scope of different UHT processing plants for processing buffalo milk taking into account quality aspects, heat stability, deposit formation and other important techno-economic consideration. 20

3. (a) Describe the principles and process in development of important dairy analogues and imitated dairy products. 10

(b) Give the principle of freeze drying and explain physico-chemical changes taking place during freeze drying. 10

4. (a) What is water activity ? Explain the process of drawing sorption charts and models. 10

(b) Explain Hurdle technology and its application in the development of shelf stable and intermediate moisture foods. 10

5. (a) Explain the Heat classification and functional properties of milk powder. 10

(b) Define and classify fabricated and formulated foods. Explain different technologies used in their development and also reflect on their nutritional aspects. 10

6. What do you understand by Active Packaging ? Describe the salient features of MAP and CAP. Give the status and scope of MAP and CAP for dairy products. 20

7. Define food additive and describe different groups of additives used as ingredients in dairy foods with examples. Reflect on their safety aspects also. 20