

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

**Term-End Examination**

**December, 2015**

**RDR-009 : APPLICATION OF BIOTECHNOLOGY  
IN DAIRY INDUSTRY**

*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. Identify the important biotechnological interventions which have the potential to have significant impact in the production and processing of milk and milk products. Explain them with successful examples. 20
  
2. Justify the statement "Genetic modification of lactic acid bacteria" can improve the technological and functional attributes of dairy starter cultures. Please support your observations with relevant examples. 20
  
3. Write short notes on the following : 20
  - (a) PCR Technique
  - (b) Bioactive peptides in milk
  - (c) Recombinant Chymosin
  - (d) LP System in milk

4. Explain role and mode of action of probiotics in control of diseases. Explain the factors in assessing the efficacy and safety of probiotics. 20
  5. What are the GM foods ? Describe the basic principle and process of making GM foods. Reflect on regulatory standards and detection of GMOs. 20
  6. Describe the salient features, covering the principle and procedure in brief, of various types of Biosensors and immuno-magnetic methods used for detection of food borne bacterial pathogens. 20
  7. Describe different types of bacteriocins produced by lactic acid bacteria. Reflect on their uses and potential in food preservation. 20
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