

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

**Term-End Examination**

**December, 2015**

**RDR-003 : PRODUCT MONITORING AND  
PROCESS CONTROL**

*Time : 3 hours*

*Maximum Marks : 100*

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

(ii) *All questions carry equal marks.*

1. What are sensors ? Discuss their classification. 20  
List different types of biosensors and give their working principles.
2. Name the techniques for particle size analysis of 20  
food products. Give their working principles.
3. Describe negative feedback control model. 20  
Explain various modes of control.
4. (a) What is response surface methodology and 5  
what is it's use ?  
(b) How a simulation model for quality 15  
optimization is developed ?
5. (a) What is GC - olfactometry ? 6  
(b) Discuss charm analysis and AEDA 14  
technique of flavour bioassay.

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6. (a) Explain the working principle of HPLC. 6  
(b) Delineate the applications of HPLC in monitoring quality of dairy products. 14
7. (a) Describe various flavour compounds that are formed during ripening of Cheddar cheese. 14  
(b) Give the principle of AAS. 6
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