

**A 1199**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Fifth Semester

Industrial Bio-Technology

IB 041 — FOOD SCIENCE AND TECHNOLOGY

**Time :** Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What do you mean by Rheology?
2. What is HFCS? Where is it used?
3. What are gliadin and glutenin?
4. Write a note on casein.
5. What is thermal death rate curve? What information does it provide?
6. Mention two methods of dehydration.
7. How is ohmic heat useful in preservation?
8. What do you mean by GRAS?
9. What is a humectant? Give an example.
10. Name two organisms which cause spoilage of meat.

PART B --- (5 × 16 = 80 marks)

11. Write an essay on GM foods. Discuss the potentials and pitfalls of genetically modified foods.

12. (a) (i) Give an outline of the process of cheese making for Cheddar cheese showing addition of starter and enzymes and their action.  
(ii) Write a note on bacterial strains and enzymes involved in dairy products.

Or

- (b) (i) Define HACCP, CCP, Deviation, Control point. (4)  
(ii) What are the steps of a HACCP program. (7)  
(iii) Write a note on the importance of HACCP in food safety. (5)
13. (a) (i) Describe the role of sugar in food systems. (8)  
(ii) Write a note on artificial sweeteners and compare their nutritive value with natural sugars. (8)

Or

- (b) (i) What are the ingredients required in yeast bread and quick bread making? What is the role of each? (8)  
(ii) What are the effects of fats and oils on baked products? (8)
14. (a) (i) Give a flow chart for the production of buttermilk. (4)  
(ii) Write a note on bacteria used in the dairy industry. (6)  
(iii) Describe the process of lactose metabolism and homo – and hetero lactic fermentation. (6)

Or

- (b) (i) Discuss the various classes of food additives. (8)  
(ii) Write a note on phytochemicals and nutraceuticals. (8)
15. (a) (i) Describe the structure of starch. (4)  
(ii) Outline the steps in the gelatinization of starch. (6)  
(iii) What factors control gelatinization. Explain. (6)

Or

- (b) (i) Describe enzymative oxidative browning of fruits and vegetables and the cooking effect on fruits and vegetables. (6)
- (ii) What are organic foods? (4)
- (iii) How does biotechnology impact a better, less expensive, safer and tastier food supply? (6)
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