M. Sc. (Food Processing & Nutrition Science) 1st Semester Examination, 2012

Microbiology of Food

(PGFPNS- 102)

Time: 3 hours **Full marks: 70**

Use separate answer script for each Group

GROUP A (Answer any FIVE questions)

1. Write the different common food poisoning agents with examples. 7

2. Summarize the nature, mode of action and effectiveness of moist and dry heat for microbial control. 7

3. a) Discuss the effects of spoilage on fats and oils in food.

   b) Write the role of water activity in food spoilage. 4+3= 7

4. Discuss the different types of food borne diseases with proper examples. 7

5. a) Discuss the oxygen relationship of microorganisms with diagram.

   b) Explain how enzymes destroy toxic oxygen. 4+3= 7

6. a) Give some examples of different types of microbes associated with food spoilage.

   b) Explain differential staining. 4+3= 7

7. Write short notes on the followings

   i) *E. coli* 0157:H7
   ii) Botulism 4+3=7

GROUP B (Answer any FIVE questions)

8. a) With a neat flow diagram discuss the process of manufacture of baker' yeast from molasses
   b) What are the cheap raw materials for baker's yeast production?
   c) How can we produce 100% ethanol from the fermentation broth?

   3+2+2=7

9 a) What is single cell protein?
   b) Describe the role of various micro- organisms in the production of single cell protein.
   c) Enumerate economical aspects of single cell protein.

   2+3+2=7

10 a) What is vinegar?
   b) Name the organism used for vinegar production.
   c) Describe the fermentative production of L- glutamic acid with a neat diagram.

   1+2+4=7

11. a) What are the differences between homofermentative and heterofermentative processes for the production of lactic acid?
   b) Discus the cultural conditions and other process parameters for fermentative production of lactic acid. 3+4 =7

12. a) Write down various conditions for production of Vitamin – B_{12}
   b) Name few micro-organisms involving vitamin- B_{12} production
   c) What are the main reasons for spoilage of fish? 3+2+2=7

13 a) What is compressed yeast?
   b) What is the function of excess biotin in the accumulation of L- lysine?
   c) Discuss the different methods of pasteurization of milk. 1+2+4=7

14. Write short notes on **(any two)** 7

   a) Spoilage of canned food
   b) Microbial hazards in food processing
   c) Spoilage of bread