

**MASTER OF SCIENCE (DIETETICS AND  
FOOD SERVICE MANAGEMENT)**

**Term-End Examination**

**June, 2007**

**MFN-003 : FOOD MICROBIOLOGY AND  
SAFETY**

Time :  $2\frac{1}{2}$  hours

Maximum Marks : 75

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**Note :** Answer *four* questions in all. Question no. 1 is *compulsory*.

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1. (a) Fill in the blanks. 5
- (i) \_\_\_\_\_ is the use of biological processes to make or change a product.
  - (ii) \_\_\_\_\_ deals with microorganisms and their culture products which contribute to the intestinal microbial balance.
  - (iii) The pink rot characteristic to egg spoilage is caused by the species of \_\_\_\_\_.
  - (iv) The bacteria responsible for the spoilage of cheese are encountered during the \_\_\_\_\_ stage of its production.
  - (v) The toxin produced by bacteria that is specific for intestinal cells and causes gastroenteritis is referred to as \_\_\_\_\_.

- (b) Differentiate between the following sets of terms. 2×5
- (i) Water Activity — Water content
  - (ii) Thermophiles — Psychrophiles
  - (iii) Obligate — Facultative anaerobes  
Anaerobes
  - (iv) Food adulterant — Food contaminant
  - (v) Cleaning — Sanitizing
2. (a) “Micro-organisms are of significance in food systems because they have both adverse and beneficial effects.” Justify the statement, giving appropriate examples. 10
- (b) What is food safety ? Elaborate on the recent concerns of food safety. 10
3. (a) Discuss, briefly, the common food borne infections, giving the symptoms, food(s) involved and preventive measures for each. 10
- (b) What are the specific toxicants found in plant foods ? Describe the harmful effects of these toxicants. 10
4. (a) Explain the different types of environmental contaminants. Illustrate how they find their way into soil, water and air, thus causing ill-health. 10
- (b) Enumerate the functional role of food additives, classified as per Codex Alimentarius. 10

5. (a) Summarize the harmful effects of adulterants, giving suitable examples. 10
- (b) What are street foods ? What food safety measures would you recommend to a street food vendor to ensure safe food ? Enumerate. 10
6. (a) If you were running a food service establishment, what are the different cleaning agents you would use to keep the place clean. Explain, highlighting how these agents work. 10
- (b) What is HACCP ? Discuss its relevance in the context of food safety. 10
7. Write short notes on any **four** of the following : 5+5+5+5
- (i) Voluntary based product certification
  - (ii) Moisture sorption properties of foods and selection of packaging material
  - (iii) Risk analysis : the new paradigm in food safety assurance
  - (iv) Essential Commodities Act, 1955
  - (v) Personal hygiene and health status of food handlers and its impact on food safety.