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**MFN-003**

**MASTER OF SCIENCE (DIETETICS  
AND FOOD SERVICE  
MANAGEMENT)(M.Sc. DFSM)**

**Term-End Examination**

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

*Time : 2½ Hours*

*[Maximum Marks : 75*

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**Note:** Question No. 1 is compulsory.

Answer Five questions in all.

All questions carry equal marks.

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1. a. Name the alcoholic products manufactured from distillation of yeast fermentation of: 3
  - i. Sugar cane juice or molasses
  - ii. Grapes and other fruits
  - iii. Wheat, Barley and other grains
- b. Name the foods implicated by the following micro-organisms which are pathogenic to humans: 3
  - i. Entamoeba histolytica

- ii. *Salmonella typhi*
  - iii. *Escherichia coli*
  - c. Define prions. List any two diseases caused by prions. 3
  - d. What is the full form of 'GRAS'. List a few GRAS chemicals that are widely used. 3
  - e. List any three toxicants found in animal foods and three toxicants found in plant foods. 3
2. Briefly describe the factors affecting the growth of micro-organisms in foods, giving appropriate examples. 15
3. Explain briefly giving examples: 5+5+5
- a. Extraneous material not normally found in food can cause illness or injury to individuals
  - b. Biological hazards in foods
  - c. Chemical hazards can be naturally occurring intentional or unintentional.
4. Enumerate the role of micro-organisms in the following, giving examples- 5+5+5
- a. Fermented Vegetable foods

- b. Fermented Soyabean products
  - c. Fermented Dairy products
5. a. What is food borne illness? Give the classification of food borne illness. 5
- b. Explain the measures you would adopt for prevention of the following- 5+5
- i. Aflatoxicons
  - ii. Cholera

Indicate the micro-organisms / toxin involved with each of the food borne illness.

6. Define food additives. Give the classification of food additives, highlighting their examples and uses in the food industry. 15
7. Explain briefly giving examples: 5+5+5
- a. Toxicity hazards related to interaction between packaging and food.
  - b. Food safety measures with regards to premises in a food service establishment.
  - c. Label requirement on a food package.

8. Write short notes on any THREE of the following:

5+5+5

- a. Components of risk analysis
- b. HACCP and effective food safety system
- c. Food Safety Act and Regulations.
- d. Cleaning agents used in food industry.