

02173

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

**Term-End Examination**

**June, 2012**

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

*Time : 2½ 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) Give one example of each : 10
- (i) Genetically Modified Food
  - (ii) Probiotic food
  - (iii) Food borne virus
  - (iv) Gram positive cocci in bunches
  - (v) Mycotoxin producer
  - (vi) Fungal inhibitor
  - (vii) Neurotoxin producer
  - (viii) Antioxidant used in food
  - (ix) Physical hazard in food
  - (x) Permitted Food colour
- (b) Define the following : 5
- (i) Hazard
  - (ii) Food biotechnology
  - (iii) CCP
  - (iv) Food Safety
  - (v) Fermentation

2. Explain the role of each briefly Canning in the food industry 5+5+5+5
- (a) Prions
  - (b) Shigella
  - (c) Fungi in the spoilage of fruits
  - (d) Iodophers
3. (a) Differentiate between : 5x2
- (i) Food infection vs Food intoxication
  - (ii) Indirect additive vs Direct Food Additive
  - (iii) Food contaminations vs Food Adulteration.
  - (iv) Risk Assessment vs Risk Communication
  - (v) Food level vs Nutrition level
- (b) Emphasize the role of packaging 5+5
- (i) in the extension of shelf life of a food product, and
  - (ii) environmental issues
4. Justify the following : (*any four*) 5+5+5+5
- (a) Wateractivity and temperature plays a critical role in food spoilage.
  - (b) Pest control measures are important for every food service establishment.

- (c) HACCP is a preventive and continuous approach to Food Safety.
  - (d) Pesticide residues are a threat to human health.
  - (e) Chlorine compounds are used in food industry for cleaning purposes.
5. (a) Enumerate the common source of contamination of food. 10
- (b) Summarize the different types of spoilage in the following foods, giving the micro-organisms involved. 10
- (i) Milk
  - (ii) Fish
  - (iii) Bread
  - (iv) Meat
6. List the symptoms, associated foods and preventive measures of any one condition associated with the following. 5+5+5+5
- (a) Food borne intoxication
  - (b) Food borne infection
  - (c) Food borne toxic infection
  - (d) Mycotoxins

- 7 (a) Define the following and present their role in the food industry. 10
- (i) Flavouring agents
  - (ii) Emulsifying/Stabilizing agents
  - (iii) Anti-caking agents
- (b) List the Compulsory and the Voluntary based product certification. 5
- (c) Define the Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT) agreements. 5
8. Write short notes on the following : 5+5+5+5
- (a) Phases of bacterial growth.
  - (b) Fermented Foods
  - (c) Street foods - a major safety concern
  - (d) Steps involved in risk assessment.
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