

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

**Term-End Examination**

**June, 2013**

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

*Time : 2½ hours*

*Maximum Marks : 75*

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

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1. (a) Give one example of each of the following : 1x10=10
- (i) Probiotic food
  - (ii) Fungi imperfecte
  - (iii) Protozoan parasite in food
  - (iv) GM Food
  - (v) Sea food toxin
  - (vi) Adulterant in mustard seeds
  - (vii) Additive in bread
  - (viii) Mycotoxin
  - (ix) Causative organism of whicker in meat
  - (x) Water - borne disease
- (b) Define following : 1x5=5
- (i) Food safety
  - (ii) Putrefaction
  - (iii) Anti caking substances

- (iv) Emulsifier
- (v) Critical Control Point

2. State the role of the following (any five) : 4+4+4+4+4
- (a) Water activity ( $a_w$ ) in food spoilage
  - (b) MAP
  - (c) Food additives
  - (d) Hygiene in food safety
  - (e) Food safety regulations
  - (f) Natural toxicants in plant foods.
3. (a) Give the full forms of : 1x5=5
- (i) PET
  - (ii) HDPE
  - (iii) UPC
  - (iv) PVDC
  - (v) PS
- (b) (i) What is food labelling ? 3
- (ii) List the mandatory labelling requirements of prepackaged food. 7
- (c) Discuss the different toxicity hazards related to packaging of foods. 5
4. (a) Describe briefly the food safety measures to be taken in a food service establishment. 10
- (b) Discuss the various cleaning agents and sanitizers used in food industry. 10
5. (a) Define a food additive. Elaborate on its role in the food industry. 5
- (b) What are the different types of additives used in food industry ? Explain, giving examples of each category. 15

6. (a) What is Risk Analysis ? 5  
(b) Why is risk assessment important ? List the four steps involved in risk assessment. 5  
(c) What are the compulsory food regulations in India ? Explain. 10
7. Write short notes on **any four** of the following :
- (a) Codex Alimentarius 5+5+5+5  
(b) Bacterial Growth Curve  
(c) Ergotism  
(d) Spoilage in canned foods  
(e) Pesticide Residues  
(f) Microbial Hazards in Food
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