

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

Term-End Examination

June, 2011

MFN-003 : FOOD MICROBIOLOGY AND SAFETY

Time : 2½ hours

Maximum Marks : 75

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

1. (a) Give one example for each of the following : 5
- (i) Proteinaceous infectious agents which cause Bovine Spongiform Encephalopathy.
 - (ii) Pathogenic bacteria found in contaminated vegetables.
 - (iii) Bacteria which causes botulism.
 - (iv) Synthetic food colour permitted for use in India.
 - (v) Appearance of pink colour in acid layer of a mixture of ghee, concentrated hydrochloric acid and furfural indicates presence of this adulterant.
- (b) Explain in 2 - 3 lines the following terms : 5x2=10
- (i) Probiotics
 - (ii) Modified Atmosphere Packaging
 - (iii) GRAS food additives
 - (iv) Rancidity
 - (v) Aflatoxicosis

2. (a) How can one avoid microbial contamination of food through the following ? **6**
- (i) Skin
 - (ii) Hands and nails
 - (iii) Nose, mouth and throat
 - (iv) Clothing
 - (v) Personal habits
- (b) Briefly describe some diseases caused by foodborne parasites. Enlist the measures you would adopt to prevent food infestation. **6+4**
- (c) What are some of the health related concerns of GM foods ? **4**
3. (a) Discuss the use of chemicals as a measure to control and destroy microorganisms in foods. **10**
- (b) Describe the food safety measures that should be observed for the premises of a catering establishment. What are the sanitary facilities that need to be provided ? **10**
4. (a) What are food additives ? Why are they used in foods ? Discuss giving examples. **10**
- (b) Describe some of the chemical changes that take place in food due to spoilage. **5**
- (c) What is Lathyrism ? What measures would you advocate to prevent lathyrism ? **5**

5. (a) What are some of the functions of food packaging ? 5
- (b) Briefly describe some toxicity hazards which result from interactions between packaging and food. 5
- (c) Why is risk assessment important ? List the four steps involved in risk assessment. 5
- (d) What do you understand by the term HACCP ? Enlist the benefits of HACCP. 5
6. (a) Describe the various physical, chemical and biological hazards that may be present in our food supply. 9
- (b) Discuss some harmful effects of food adulterants. 6
- (c) List some important features of the PFA Act, 1954. 5
7. Write short notes on *any four* of the following : 5+5+5+5
- (a) Use of microbes in Industry
- (b) Spoilage of fruits and vegetables
- (c) Epidemic dropsy
- (d) Antinutritional factors in foods
- (e) Role of Codex Alimentarius Commission in food regulations