

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

Term-End Examination

December, 2006

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

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

Maximum Marks : 75

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

1. (a) Explain the following in 2 – 3 sentences each : 10

(i) GRAS

(ii) CCP Decision Tree

(iii) Surfactants

(iv) Label

(v) Codex Alimentarius

(b) Fill in the blanks :

5

(i) _____ are the causative agents of bovine spongiform encephalopathy (BSE) and Creutzfeldt-Jakob disease (CJD).

- (ii) The bacterial species which grow at 0° C and even below and have an optimum temperature range of 10° – 20° C are called _____ .
- (iii) Whether an egg is defective or not can be identified by subjecting the egg to a process called _____ .
- (iv) Most important mould involved in the spoilage of bread is _____ which produces the characteristic black spots.
- (v) Substances that can pick-up moisture without themselves becoming wet are called _____ agents.
2. (a) "Microorganisms are of significance in food system because they have both adverse and beneficial effects." Justify the statement, giving appropriate examples. 10
- (b) Discuss the importance of safe food and differentiate between 'absolute food safety' and 'relative food safety'. 10
3. (a) Describe the chemical methods for control and destruction of microorganisms. 10
- (b) "Sanitation is a way of life." Comment on the statement with regards to sanitation in food service establishments. 10

4. (a) Differentiate between food borne infections and food borne intoxications, giving appropriate examples. 4
- (b) Discuss the causative agents and methods to control food borne toxic infections. 8
- (c) What are mycotoxins ? Elaborate on any two disease conditions caused by ingestion of foods that contain mycotoxins. 8
5. (a) List the three sources of food contaminants of natural origin. Elaborate on any one source of contaminant in detail. 7
- (b) What are food additives ? Comment on the safety issues linked with the use of additives in our food. 6
- (c) Elaborate on the various compulsory national legislations put in place by the Government to provide safe food to the consumers. 7
6. (a) Briefly describe the interaction between food and its packaging in the context of toxicity hazards and the environmental concerns. 10
- (b) Define risk analysis. Discuss its significance and its components in the context of management of public health hazards in foods. 10
7. Write short notes on any **four** of the following : 5+5+5+5
- (i) Anti-nutritional factors in foods
- (ii) Harmful effects of adulteration
- (iii) Food safety on wheels, wings and waves
- (iv) International agreements in the area of food standardization and quality control
- (v) Personal hygiene of food handlers and its influence on food safety