

MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

Term-End Examination

June, 2015

02305

MFN-003 : FOOD MICROBIOLOGY AND SAFETY

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

Maximum Marks : 75

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

1. (a) Match the items in column A with the items in column B. $10 \times 1 = 10$

<i>Column A</i>	<i>Column B</i>
(i) Sauerkraut	(1) Canning
(ii) Mad cow disease	(2) <i>Serratia marcescens</i>
(iii) Nicolas Appert	(3) Ergot
(iv) Red rot	(4) Fermented cabbage
(v) <i>Claviceps</i>	(5) Sodium salts of fatty acids
(vi) Detergent	(6) <i>Lathyrus sativus</i>
(vii) Goitrogens	(7) Salt
(viii) Halophile	(8) Prions
(ix) PET	(9) Thyroid gland
(x) BOAA	(10) Carbonated drinks

- (b) Give full forms of the following : $5 \times 1 = 5$
- (i) UHT
 - (ii) GRAS
 - (iii) BIS
 - (iv) MAP
 - (v) ISO

2. (a) Define any **five** of the following : $5 \times 2 = 10$
- (i) Probiotics
 - (ii) Dioxins
 - (iii) Facultative anaerobes
 - (iv) Anti-caking agents
 - (v) Iodophors
 - (vi) Antiseptics

- (b) Fill in the blanks of the following : $10 \times 1 = 10$
- (i) Bottom yeast produces _____ .
 - (ii) _____ is a resting structure produced within the bacterial cell.
 - (iii) Foods that spoil easily are called _____ foods.
 - (iv) Botulism is caused by neurotoxin produced by _____ .
 - (v) Good air circulation can be provided by installing _____ .

- (vi) Moulds produce toxin called _____ .
- (vii) Water to be used for preparing food and beverages must be _____ .
- (viii) The sanitizers meant for hand washing need to be replaced often to avoid _____ slime formation.
- (ix) The viruses consist of a protein layer called _____ .
- (x) _____ is an expression of the amount of free water vapour present on a product.

3. Write short notes on any *four* of the following : 4×5=20

- (a) Genetically modified foods
- (b) Methods of food preservation
- (c) Disinfectants
- (d) Risk analysis
- (e) Physical hazards in food
- (f) Principles of HACCP
- (g) Food adulterants

4. (a) Draw the bacterial growth curve. Explain all the stages of the growth curve. 10
- (b) List the factors which affect the bacterial growth. Explain any *one* factor in detail. 10

5. (a) List a few factors that make a food unacceptable. What chemical changes in food occur due to spoilage ? 7+7=14
- (b) Briefly discuss the spoilage of fruits and vegetables **OR** cereals and cereal products. 6
6. (a) Why are food additives added to foods ? Distinguish between direct and indirect food additives, giving suitable examples. 10
- (b) Give any five types of additives and their functional roles. 10
7. (a) What are the chief factors to be considered while planning the kitchen layout ? 10
- (b) Explain the various storage techniques for different foods. 10
-