

**POST GRADUATE DIPLOMA IN FOOD
SCIENCE AND TECHNOLOGY (PGDFT)**

Term-End Examination

December, 2016

00289

MFT-002(S) : FOOD MICROBIOLOGY

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions. Question no. 1 is compulsory. All questions carry equal marks.

1. Fill in the blanks with suitable words : $10 \times 1 = 10$

- (a) _____ group of microbes needs organic source of food (heterotrophic) nutrition, mostly multicellular and consists of long filaments.
- (b) The Dairy Fermentation primarily involves conversion of certain organic compounds mainly by _____ .
- (c) An organism which does not require free oxygen is characterized by _____ .
- (d) Thermophilic bacteria are capable to grow at _____ and above.
- (e) The transfer of harmful bacteria from one food to another or from hands to food is called as _____ .

- (f) The common symptoms of food poisoning are _____ and _____ .
- (g) The dietary components which exclusively support the growth of probiotics are referred as _____ .
- (h) _____ is a microorganism that can grow in high sugar concentration.
- (i) Soft rot of carrot is caused by _____ .
- (j) The fastest method of counting micro-organisms under direct method is _____ .

2. Explain the following : *5×2=10*

- (a) Useful moulds for food industry
- (b) Spoilage yeasts with type of spoilage
- (c) Bacteriocins
- (d) Nutritional types of micro-organisms
- (e) Biological spoilage of canned products

3. Give the principles of the following : *5×2=10*

- (a) Gram Staining
- (b) ELISA
- (c) Most Probable Number (MPN) Method
- (d) Flow Cytometry
- (e) PCR

4. Define growth and describe the growth curve of a bacterial population with a time vs log number figure. 10
5. (a) What is ropiness in bread ? Explain the conditions favouring ropiness in bread. 5
- (b) Explain the spoilage sequence of flour with the increase of water level in the product. 5
6. List the various types of bacterial spoilage with causative organisms observed in fruits and vegetables. Highlight the steps to control or prevent bacterial spoilage. 10
7. Explain any *five* of the following with respect to staphylococcus food poisoning : 10
- (a) Characteristics of organisms
- (b) Causes of contamination
- (c) Control measures
- (d) Isolation
- (e) Identification
- (f) Enumeration
8. Write short notes on any *two* of the following : 2×5=10
- (a) Five fermented dairy products with fermenting organism
- (b) Water Activity
- (c) Botulism