

**POST GRADUATE DIPLOMA IN
FOOD SCIENCE AND TECHNOLOGY**

Term-End Examination

June, 2012

MFT-002 : FOOD MICROBIOLOGY

Time : 3 hours

Maximum Marks : 70

Note : Attempt all questions.

All the questions carry equal marks.

1. Fill in the blanks : **10x1=10**
- (a) Two commonly occurring molds in dairy products are _____ and _____ .
 - (b) The lethal effect of freezing on bacteria is due to _____ .
 - (c) Coliforms ferment lactose within 48h at 37°C with the production of _____ and _____ .
 - (d) The two types of materials responsible for ropiness are _____ and _____ .
 - (e) The common symptoms of food poisoning are _____ and _____ .
 - (f) Psychrotrophic bacteria produce heat stable _____ and _____ enzymes in milk which can survive UHT processing.

- (g) *Clostridium botulinum* produces _____ which act on the _____ in our body.
- (h) Vinegar is produced by the action of _____ and is chemically _____
- (i) Soft rot of carrot is caused by _____
- (j) Two examples of fermented vegetables are _____ and _____ .

2. Match the following :

20x $\frac{1}{2}$ =10

- | | |
|--------------------------------------|---------------------------------------|
| (a) Ochratoxin | (i) <i>Escherichia coli</i> |
| (b) Kimchi | (ii) Fermented milk |
| (c) Koch's Postulate | (iii) Penicillin |
| (d) Alexander Fleming | (iv) Robert Koch |
| (e) Dahi | (v) Fermented Radish |
| (f) Diarrhoea | (vi) <i>Aspergillus ochraceus</i> |
| (g) Baker's Yeast | (vii) <i>Lactobacillus bulgaricus</i> |
| (h) <i>Bacillus</i> | (viii) <i>Clostridium botulinum</i> |
| (i) <i>Clostridium</i> | (ix) Bacteriocin |
| (j) Pediocin | (x) Neurotoxin |
| (k) Botulism | (xi) Aerobic spore producer |
| (l) Yoghurt | (xii) <i>Saccharomyces cerevisiae</i> |
| (m) Vinegar | (xiii) Two step fermentation |
| (n) PCR | (xiv) Break down of Sugars |
| (o) Gamma Rays | (xv) Bacteriophage |
| (p) <i>Salmonella</i> | (xvi) Probiotic |
| (q) Benzoate | (xvii) Chemical preservative |
| (r) <i>Lactobacillus acidophilus</i> | (xviii) Food infection |
| (s) Virus infecting bacteria | (xix) Ionising |
| (t) Saccharolytic | (xx) DNA amplification |

3. (a) Define the following in **one** sentence : $10 \times \frac{1}{2} = 5$
- (i) Thermophilic micro organisms
 - (ii) Mycotoxins
 - (iii) Bacteriocins
 - (iv) D-value
 - (v) Saccharolytic bacteria
 - (vi) Sauerkraut
 - (vii) Starter cultures
 - (viii) Chemical preservatives
 - (ix) Blanching
 - (x) Cold Sterilization.
- (b) Expand the following : $10 \times \frac{1}{2} = 5$
- (i) CFTRI
 - (ii) ELISA
 - (iii) ISO
 - (iv) MRS
 - (v) TDT
 - (vi) MAP
 - (vii) RH
 - (viii) DNA
 - (ix) WHO
 - (x) PFA
4. Write short note on *any two* of the following :
- (a) Flat sour spoilage $5 \times 2 = 10$
 - (b) Botulism
 - (c) Differentiate between Exotoxins and Endotoxins
 - (d) Define MA/CA storage of fruits and vegetables mention the minimum O_2 and maximum CO_2 levels tolerated by most fruits and vegetables.

5. List the various types of spoilage of vegetables and their causal organisms. Highlight the steps to be taken to control or prevent bacterial spoilage of fruits and vegetables. **10**

OR

What are the sources of contamination of Fish and egg? Describe the techniques for egg preservation. **5+5**

6. (a) Describe the natural souring or curdling of milk. Highlight the principles of food preservation. **5+5=10**

OR

(b) Answer the following/Explain : **5×2=10**

- (i) Define Ropiness in milk
- (ii) Antimicrobial activity of lactic acid bacteria.
- (iii) Define D and F values
- (iv) Bloating of cans
- (v) Potassium metabisulphite

7. (a) Describe bacterial growth curve and name the various factors influencing microbial growth in foods. **10**

OR

(b) Describe different types of microbiological growth media. **10**