

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

00248

Term-End Examination

June, 2011

MFT-002 : FOOD MICROBIOLOGY

Time : 3 hours

Maximum Marks : 70

Note : *Attempt all the questions. All the questions carry equal marks.*

1. State True or False **20x $\frac{1}{2}$ =10**

- (a) *S.aureus* produces heat resistant enterotoxin.
- (b) Petulin is produced by *Aspergillus sp.*
- (c) The micro organisms that grow at 30 – 37°C are known as psychrophiles.
- (d) Many of the lactic acid bacteria are assigned with GRAS status.
- (e) Food borne packages *Listeria monocytogenes* is more problematic to pregnant women.
- (f) *Leuconostoc sp.* is a homofermentative bacteria.

- (g) Direct-to-vat cultures have a count of $10^6 - 10^7$ CFU/ml.
- (h) *Rhizopus oligosporus* is used in the preparation of tempeh.
- (i) The first person to see bacteria under microscope is Louis Pasteur.
- (j) Nisin is produced by *Lactobacillus plantarum*.
- (k) Sodium propionate is used to prevent mold growth.
- (l) Controlled atmosphere storage is generally practised to preserve meat products.
- (m) Green rot spoilage in eggs is caused by *Pseudomonas fluorescens*.
- (n) Vinegar should have less than 4% acetic acid.
- (o) The bacteria that survive pasteurization are called as thermodeurics.
- (p) Oxidation of wines into acetic acid is mediated by *Gluconobacter* sp.
- (q) Fructose oligosaccharides enhance the growth of Bifidobacteria.

- (r) Ozone is used to disinfect the food processing rooms.
- (s) The time in minutes required to destroy the organisms in a specified medium at 121.1°C is D-value.
- (t) Addition of sugar at high levels increases water activity.

2. (a) Expand the following : **10x½=5**

- (i) RBCA, (ii) MPN, (iii) HGMF,
- (iv) GIT, (v) SCP, (vi) DEFT
- (vii) EEC, (viii) VRBA, (ix) FBI,
- (x) TMTC

(b) Describe the following in one sentence each :

10x½=5

- (i) Psychrotrophs, (ii) Putrefaction,
- (iii) Halotolerant, (iv) 12 D concept,
- (v) Osmotic dehydration,
- (vi) Endospores, (vii) Probiotics
- (viii) Prebiotics (ix) GRAS organisms,
- (x) Vaccination

3. Match the following :

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

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|------------------------------------|-------------|--------------------------------|
| (a) Lactic acid bacteria | () (i) | Wine fermentation |
| (b) <i>Serratia</i> sp. | () (ii) | <i>Clostridium nigrificans</i> |
| (c) <i>Flavobacterium</i> | () (iii) | Heat stable enterotoxins |
| (d) Lipolytic bacteria | () (iv) | Probiotic culture |
| (e) Heterofermentor | () (v) | Spices |
| (f) Anaerobic spoiler | () (vi) | green rot in eggs |
| (g) <i>Bifidobacterium</i> | () (vii) | vegetables |
| (h) <i>Zygo saccharomyces</i> | () (viii) | <i>Salmonella</i> sp. |
| (i) Fishi smell | () (ix) | <i>S. thermophilus</i> |
| (j) Saccharomyces | () (x) | Spread plate method |
| (k) Staphylococcus | () (xi) | Psychrotroph |
| (l) <i>Listeria monocytogenes</i> | () (xii) | Micrococcus |
| (m) Sulfide stinker | () (xiii) | Leuconostoc |
| (n) <i>Pseudomonas fluorescens</i> | () (xiv) | <i>Clostridium butyricum</i> |
| (o) Bacterial Spores | () (xv) | Cheese |
| (p) MA storage | () (xvi) | Butter |
| (q) XLD Agar | () (xvii) | Osmophile |
| (r) Penicillium | () (xviii) | Food borne petrogens |
| (s) Yeast and mould | () (xix) | Red pigment |
| (t) Yoghurt | () (xx) | fermented food |

4. Write a short note on *any two* of the following :

- (a) Preservation of starter cultures 2x5=10
- (b) Different types of spoilage of canned foods
- (c) Characteristics of a probiotic bacteria
- (d) Yoghurt preparation

5. (a) Describe various chemical methods being used to control micro organisms in foods. 10

OR

- (b) What is a disease ? Give examples to food borne diseases with causative organisms. What are the factors responsible for food borne diseases ? 2+3+5

6. (a) Describe various living and non living sources of contamination in food industry. **5+5=10**
- OR**
- (b) Describe various physical and chemical factors that effect the growth of microorganisms in foods. **5+5=10**
7. Define the following in one sentence each : **10x1=10**
- (a) Botulism
 - (b) Bacteriostasis
 - (c) Metacryotic liquid
 - (d) Dehydrofreezing
 - (e) Springer defect
 - (f) Wood-smoke
 - (g) MPN Test
 - (h) Thermo stabilization
 - (i) Cold shock
 - (j) UHT process
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