

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

Term-End Examination

December, 2015

MFT-002 : FOOD MICROBIOLOGY

Time : 3 hours

Maximum Marks : 70

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

1. Fill in the blanks : 10x1=10

- (a) Vinegar is chemically _____.
- (b) Penicillin, the first discovered antibiotic is produced by _____.
- (c) The milk clotting enzyme used in cheese making is called _____.
- (d) Virus infecting bacteria is called _____.
- (e) Moist heat kills by _____.
- (f) Examples of ionizing radiations are _____, _____.
- (g) UV light produces _____ dimers which interfere in the replication of DNA.
- (h) A common alcohol used for the surface or on skin for killing micro-organisms is _____.
- (i) The water activity of most fresh foods is above _____.
- (j) pH is defined as _____.

2. Match the following :

20x0.5=10

(a)	Anton Von Leeuwenhock	(i)	Appert
(b)	Canning	(ii)	Metchnikoff
(c)	Father of probiotics	(iii)	Pediocin
(d)	Clostridium sp	(iv)	Microscope
(e)	Pediococcus	(v)	G +ve anaerobic spore former
(f)	Surface taint of butter	(vi)	Enterobacteriaceae
(g)	Nisin	(vii)	Radiations
(h)	Bergey	(viii)	Taq DNA Polymerase
(i)	Agaricus	(ix)	Acetic acid
(j)	Gas gangrene	(x)	Diacetyl flavour
(k)	Dahi	(xi)	Clostridial infection of tissues
(l)	Vinegar	(xii)	Mushroom
(m)	PCR	(xiii)	Manual of systematic bacteriology
(n)	Cold sterilization	(xiv)	Lactococcus lactis
(o)	E. coli	(xv)	Pseudomonas putrefaciens
(p)	Nitrates	(xvi)	Pasteurization
(q)	Lactobacillus bulgaricus	(xvii)	Gram negative bacteria
(r)	Avian Flu	(xviii)	Bulgarian butter milk
(s)	Lipid A	(xix)	Virus
(t)	Louis Pasteur	(xx)	Curing of meat

3. (a) Define the following in one sentence : 10x0.5=5

- (i) High acid foods
- (ii) Ionising radiation
- (iii) D value
- (iv) Halophilic bacteria
- (v) Intermediate moisture foods
- (vi) Saccharolytic bacteria
- (vii) Botulism
- (viii) Putrefaction
- (ix) Asepsis
- (x) Generation time

- (b) Expand the following : **10x0.5=5**
- (i) HEPA
 - (ii) GRAS
 - (iii) FDA
 - (iv) SPC
 - (v) UV
 - (vi) EMB
 - (vii) CSIR
 - (viii) LTHT
 - (ix) RNA
 - (x) MA storage

4. Write short notes on **any two** of the following : **5x2=10**
- (a) Sonication
 - (b) Natural souring of milk
 - (c) Vinegar fermentation
 - (d) Gas formation

5. (a) Describe *Clostridium perfringens* food poisoning. **10**

OR

- (b) Describe ropiness fermentation of milk or cream and butter formation of sweetened condensed milk. **5+5=10**

6. (a) Define sweet curdling. Describe proteolysis with respect to milk and dairy products. **10**

OR

- (b) Distinguish between the following : **5x2=10**
- (i) Disinfection and Antiseptic
 - (ii) Moist heat and Dry heat
 - (iii) D and F values
 - (iv) Sterilization and Pasteurization
 - (v) Exotoxins and Endotoxins

7. (a) What is chemical food preservation ? 10
Describe the use of benzoates, sorbates, propionates and nitrates in food preservation.

OR

- (b) What is soft rot ? Describe the organisms 10
responsible for this and the factors affecting the development of soft rot.
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