

**POST GRADUATE DIPLOMA IN FOOD SAFETY
AND QUALITY MANAGEMENT (PGDFSQM)**

Term-End Examination

01514

December, 2013

**MVP-001 : FOOD FUNDAMENTALS AND
CHEMISTRY**

Time : 3 hours

Maximum Marks : 100

Note : Attempt any five questions. All the questions carry equal marks.

1. Fill in the blanks in the following choosing the correct answer from the alternatives given : **20x1=20**
- (a) Corn protein is also called as _____.
- (i) Bromelin
 - (ii) Hordien
 - (iii) Zein
- (b) Beer is made by fermentation of _____.
- (i) Molasses
 - (ii) Malted barley
 - (iii) Grapes
- (c) Bond angle in a water molecule is _____.
- (i) 101°
 - (ii) 104.5°
 - (iii) 110°
- (d) Acid foods have pH less than _____.
- (i) 4.6
 - (ii) 5.6
 - (iii) 3.0

- (e) Cold water extraction of skins and bones of animals leads to production of _____.
- (i) Lard
 - (ii) Collagen
 - (iii) Fat
- (f) Example of ethylene absorbent used in active packaging system is _____.
- (i) Selenium
 - (ii) H_2O_2
 - (iii) ascorbic acid
- (g) Optimal O_2 concentration for MAP of apples is _____ vol%.
- (i) < 3
 - (ii) < 5
 - (iii) < 1
- (h) Soft water has total hardness in the range of _____ ppm.
- (i) 0-25
 - (ii) 0-55
 - (iii) 0-75
- (i) Haemoglobin is an example of _____ protein.
- (i) Chremo
 - (ii) Phospho
 - (iii) Lipo
- (j) Amino-acids are bounded by _____ linkage.
- (i) Glycosidic
 - (ii) Van der waal
 - (iii) Peptide
- (k) pH at which the protein exists in the electrically neutral form is called :
- (i) Basic pH
 - (ii) Acidic pH
 - (iii) Isoelectric point

- (l) Saccharin is about _____ times sweeter than sucrose.
- (i) 200
 - (ii) 500
 - (iii) 1000
- (m) BHA is an example of a _____.
- (i) Colouring agent
 - (ii) Firming agent
 - (iii) Antioxidant
- (n) Non-nutritive sweetener derived from stevia is :
- (i) Saccharin
 - (ii) Dulcin
 - (iii) Rebiana
- (o) _____ is used to firm the texture of canned fruits
- (i) CaCl_2
 - (ii) Ca(OH)_2
 - (iii) NaCl
- (p) Cream contains _____ % milk fat.
- (i) < 10
 - (ii) < 25
 - (iii) 30
- (q) Cocoa contains _____ % caffeine.
- (i) 0.8
 - (ii) 1.6
 - (iii) 0.6
- (r) HTST pasturization is done at 72°C for _____.
- (i) 15 sec
 - (ii) 15 min
 - (iii) 30 min
- (s) Water soluble vitamin required for healthy gums is _____.
- (i) Vitamin B_6
 - (ii) Vitamin C
 - (iii) Vitamin K

(t) : Predominant acidulant in tamarind is

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- (i) Citric acid
 - (ii) Malic acid
 - (iii) Tartaric acid

2. Define the following (in 2-3 lines) : 10x2=20

- (a) Nutraceutical
- (b) Whisky
- (c) Parboiling
- (d) Lactose intolerance
- (e) BOD
- (f) Evisceration
- (g) Acid value
- (h) Oligosaccharide
- (i) Smoke point
- (j) Electromagnetic waves

3. (a) Write **true** or **false** for the following : 10x1=10

- (i) Cereals are deficient in lysine.
- (ii) Butyric acid in the fat can be determined by krischner value.
- (iii) Primary and secondary treatment of waste water together can remove upto 90% of the BOD.
- (iv) Water activity of fresh fruits and vegetables falls in the range of 0.80 to 0.88.
- (v) The severity of heat treatment for processing is determined by the pH of the food.
- (vi) ICP is an atomic emission technique using argon plasma as an excitation source.
- (vii) Rice, maize, millets are important Rabi crops.

- (viii) The endosperm is the part of the grain from which a new plant develops.
- (ix) Fish are not a good source of omega-3 fatty acids.
- (x) Cut of meat taken from the sides, belly or back of a pig that has been cured and/or smoked is called ham.
- (b) Write full form for the following : **10x1=10**
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|-------------|------------|
| (i) IUPAC | (ii) PET |
| (iii) UHT | (iv) GRAS |
| (v) AGMARK | (vi) GC-MS |
| (vii) ASEAN | (viii) FDA |
| (ix) ICMR | (x) TDT |
4. (a) What are the categories of acceptance sampling ? Explain the OC curve. **7+3=10**
- (b) Explain the various spectroscopic instruments used in food analysis. **10**
5. (a) What is aluminium foil ? Give its properties and advantages. **1+2+2=5**
- (b) What are sorption isotherms ? What is their significance ? **2+3=5**
- (c) Draw a detailed layout of a sensory lab. **5**
- (d) Classify protein on basis of their biological functions giving examples. **5**
6. (a) Differentiate between durables and perishables. **5**
- (b) What are the different indicators used in intelligent packaging systems ? **5**
- (c) What is rancidity ? How does it affect food quality ? **2+3=5**
- (d) Explain the phenomena of mutarotation in sugars. **5**

7. (a) What are the main objectives of packaging of food ? Explain the different forms of packaging used in the food industry. **4+6=10**
- (b) What do you understand by functional foods ? Give a detailed account of the various functional foods and their health benefits. **4+6=10**
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