

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

**Term-End Examination**

**December, 2014**

02456

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

*Time : 3 hours*

*Maximum Marks : 100*

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

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1. Match the words given under column B with the appropriate statements given under column A.

$10 \times 2 = 20$

Column A	Column B
(i) Thick oily product obtained from the solvent extraction of spices.	Syneresis
(ii) Surface active substances used in food processing.	Colloid
(iii) Imparts natural yellow, orange or red colour to food.	Phyto-chemicals

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|--------|---|--------------|
| (iv)   | The process of replenishing nutrients lost during processing.                                     | Oleoresin    |
| (v)    | Change in the direction of optical rotation of sugar solution due to the hydrolysis of sucrose.   | Emulsifier   |
| (vi)   | Change in the optical rotation of sugar solution due to conversion of one isomer into another.    | Rheology     |
| (vii)  | The separation of liquid from the gel caused by contraction of gelling agent.                     | Carotenoids  |
| (viii) | The system in which solid particles are not dissolved but suspended in it.                        | Enrichment   |
| (ix)   | Study of deformation and flow in food in response to an applied load.                             | Inversion    |
| (x)    | Active derivatives extracted from plants exhibiting pharmacological and physiological properties. | Mutarotation |

2. Differentiate the following terms : 10×2=20

- (i) Active packaging and Intelligent packaging
- (ii) Laminate and Composite container
- (iii) R.M. value and Polenske value
- (iv) Annealing and Flanging
- (v) Probability and Non-probability sampling
- (vi) Sorption and Desorption isotherms
- (vii) Latent heat and Heat of fusion
- (viii) BOD and COD
- (ix) Hydrolysis and Inversion
- (x) Polysaccharide and Hydrocolloid

3. Fill in the blanks in the following : 10×2=20

- (i) Assurance of supply of enough food to people to lead healthy life is known as \_\_\_\_\_ while assurance of safe food to the consumer is known as \_\_\_\_\_ .
- (ii) Use of bright light source behind an egg to show details through the shell is called \_\_\_\_\_ whereas the process of plunging of a pig or poultry in very hot water is called \_\_\_\_\_ .
- (iii) The calf meat is known as \_\_\_\_\_ whereas the meat of hunted wild animal is called \_\_\_\_\_ .

- (iv) The orientation of two hydrogen atoms attached to the carbon atoms joined by double bonds decide the cis and trans isomers. When these are on either side of the double bond, a \_\_\_\_\_ isomer is formed, while when both the hydrogens are on the same side \_\_\_\_\_ isomer is formed.
- (v) Lactose is a \_\_\_\_\_ saccharide whereas raffinose is a \_\_\_\_\_ saccharide.
- (vi) The part in a grain which is responsible for the development of a new plant is called \_\_\_\_\_ while the part which stores the food in it is known as \_\_\_\_\_ .
- (vii) Toned milk contains \_\_\_\_\_% fat and \_\_\_\_\_% SNF.
- (viii) Moderately hard water contains \_\_\_\_\_ total hardness in ppm whereas very hard water contains \_\_\_\_\_ ppm hardness.
- (ix) Ratio of partial pressure of water in food to vapour of pure water multiplied by 100 is known as \_\_\_\_\_ while percent relative humidity divided by 100 is called \_\_\_\_\_ .
- (x) Sequence of amino acids in a protein is known as its \_\_\_\_\_ structure while combination of two or more polypeptides in protein is called \_\_\_\_\_ structure.

4. Write short notes on any *five* of the following :

5×4=20

- (i) Rose-Gottlieb method of fat determination
- (ii) Fat constants
- (iii) Operating characteristic curves
- (iv) Sensory evaluation of food
- (v) Traditional Indian dairy products
- (vi) Nutraceuticals
- (vii) MAP of minimally processed foods

5. (a) Discuss the functional properties and food applications of proteins. 10
- (b) Explain the advantages and disadvantages of G.M. and organic foods. 10
6. (a) Discuss the basic methods of preservation of food. Which is the best method to retain nutritional quality of food ? 7+3
- (b) What is edible packaging ? Give the advantages and requirements of edible packaging. 2+8
7. (a) What are hyphenated techniques ? Discuss the advantages of LC-MS and GC-MS over HDLC and GC. 2+8
- (b) Discuss the functions of aerobic lagoons and trickling filters in waste treatment. 10