

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

Term-End Examination

December, 2016

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

Time : 3 hours

Maximum Marks : 100

- Note :*
- (i) *Attempt any five questions.*
 - (ii) *All the questions carry equal marks.*

1. Fill in the blanks in the following with appropriate words : 20x1=20
- (a) Chemical reaction between an amino acid and a reducing sugar, usually requiring heat is called _____.
 - (b) Inability to digest and absorb lactose is termed as _____.
 - (c) Large value of saponification number indicate that the fatty acids in the oil or fat has _____ hydrocarbon chain.
 - (d) Iodine value is helpful in detecting the _____ in oil/fat.
 - (e) Groundnut oil has _____ saturation than olive oil.
 - (f) BHA is an example of _____ antioxidant.

- (g) Common name for omega 3 fatty acid is _____.
- (h) Annatto colour is obtained from _____ plant.
- (i) The best coffee is obtained from _____ plant.
- (j) Botanical name of tea is _____.
- (k) _____ are substances that can delay the onset or slow the rate of oxidation.
- (l) Technique which uses bright light source behind the egg to show detail through the cell is known as _____.
- (m) Ashwagandha is also known as _____.
- (n) The common name for retinol is _____.
- (o) The common name for cynocobalamine is _____.
- (p) A cut of meat taken from the sides, belly or back of a pig is called _____.
- (q) The thigh and rump of pork is also known as _____.
- (r) The milk having 1.5% Fat and 9.0% SNF is called _____ milk.
- (s) A disorder primarily caused by lack of Vitamin D is _____.
- (t) Milk with added minerals or vitamins is called _____ milk.

2. (a) Differentiate between the following : $5 \times 2 = 10$

- (i) Food fortification and Food enrichment.
- (ii) Muta rotation and Inversion of sugar.
- (iii) Class I and Class II Preservatives.
- (iv) Adulteration and Contamination of Food.
- (v) Essential and Non-essential amino acids.

(b) Give one word answer for the following :

$10 \times 1 = 10$

- (i) A property of water due to which it absorb a lot of heat before it become hot.
- (ii) Esters of Fatty acid with long chain monohydric alcohol.
- (iii) The molecule having binding capacity for water.
- (iv) Energy required to change 1 gm of ice to water vapour.
- (v) The natural antioxidant present in vegetable oil.
- (vi) The natural emulsifier present in milk lipids.
- (vii) The pH at which proteins have no net charge.
- (viii) Sandwich of two or more packaging material.
- (ix) Breaking of fat into smaller size so that it no longer separates from the milk.
- (x) Cooling the ice-cream mix at $2 - 4^{\circ}\text{C}$ and keeping it for 4 - 5 hours.

3. (a) What is Cryogenic Freezing ? 5
 (b) Indicate 5 important advantages of Corrugated Fiber Board (CFB). 5
 (c) List out the general principles and processes for treatment of liquid waste in the food industry. 10
4. Write short notes on the following : 5x4=20
 (a) Rancidity
 (b) Biodegradable plastics
 (c) TLC
 (d) Judging the freshness of a fish
5. (a) Explain the principle of Kjeldahl method of protein determination and give the function of each reagent used. 10
 (b) What do you understand by sensory evaluation ? Describe the types of panel and the criteria used to select them. 10
6. (a) Define Food Processing. Briefly describe the various techniques used for this purpose. 6
 (b) Write full-form of : 4
 (i) GC - MS (ii) TBHQ
 (iii) WHO (iv) MUFA
 (c) What are GMOs ? Highlight the benefits, risks and regulations associated with them. 10
7. (a) Define water activity and explain its role in food spoilage. 5
 (b) What are the factors affecting choice of sampling plan ? 5
 (c) Describe the role of food additives. 5
 (d) Describe briefly primary, secondary and tertiary processing. 5
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