

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

Term-End Examination

December, 2022

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

Time : 3 hours

Maximum Marks : 100

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

1. (a) Give one word answer for the following : *10×1=10*
- (i) The property of fat indicating its molecular weight.
 - (ii) Chemical reaction between an amino acid and a reducing sugar, usually requiring heat.
 - (iii) An example of synthetic antioxidant.
 - (iv) Inability of individuals to digest and absorb lactose.
 - (v) Esters of fatty acids with long chain monohydric alcohol.

- (vi) A non-edible oilseed crop.
- (vii) Linkage existing between amino acids to form the protein chain.
- (viii) Another name for Vitamin K₁.
- (ix) Example of an oxygen absorber used in active packaging systems.
- (x) Water having hardness in the range of 0 – 75 ppm.

(b) Define : *10×1=10*

- (i) Food security
- (ii) Halal meat
- (iii) Modified starch
- (iv) Parboiling
- (v) Food chemistry
- (vi) Flash point
- (vii) Gelatinization
- (viii) Trans fats
- (ix) Toned milk
- (x) Rickets

2. (a) Differentiate between the following : $2 \times 2 \frac{1}{2} = 5$
- (i) Essential and Non-essential amino acids
- (ii) Class I and Class II Preservatives
- (b) Name different types of browning which occur in food and explain how cut fruits and heated milk become brown. $1+2+2$
- (c) Define sensory evaluation. Describe in detail the purpose for which it is used in the food industry. $2+8$
3. Write short notes on the following : $4 \times 5 = 20$
- (a) Water Activity and Food Spoilage
- (b) Biodegradable Plastics
- (c) Importance of Blanching
- (d) Advantages of CFB boxes
4. (a) What is a sorption isotherm ? Discuss its significance in the food industry. 10
- (b) Describe the essential labelling requirements on a food package under the Indian food laws. 10

5. (a) What are the different indicators used in intelligent packaging ? 5
- (b) Differentiate between durables and perishables. 5
- (c) What are minerals ? Classify them and highlight their functions in the body. 10
6. (a) Give an account of the heavy metals found in foods. How do they affect the human body ? 10
- (b) Differentiate between analytical and affective tests. 5
- (c) Draw a detailed layout of a sensory evaluation laboratory. 5
7. (a) What are food additives ? Discuss their important food applications. 10
- (b) What is aluminium foil ? Give its properties and advantages. 2+6
- (c) What is cured meat ? 2
8. (a) How can moisture be determined in foods ? 3
- (b) Write the full form of the following : 5×1=5
- (i) IUPAC
- (ii) UHT
- (iii) APEDA
- (iv) COD
- (v) HACCP

(c) Describe rancidity of fats. 5

(d) Fill in the blanks : 7×1=7

- (i) Corn protein is also called _____.
 - (ii) Cold water extraction of skin and bones of animal leads to preparation of _____.
 - (iii) Acidic foods have pH less than _____.
 - (iv) Saccharin is _____ times sweeter than sucrose.
 - (v) Liquid nitrogen boils at _____.
 - (vi) Water normally contains _____ ppm O_2 .
 - (vii) Bond angle in water molecule is _____.
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