Total number of printed pages:03 **Programme(D)/IV/DFET410**

2025

PROFESSIONAL PRACTICE-II

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

(Question no.1 is compulsory and attempt any three questions from questions no. 2 to 7.)

Q. no. 1

A. Choose the correct answer (1 *mark each*).

1. Which vitamin is known as ascorbic acid?

[A] Vitamin A [B] Vitamin C [C] Vitamin D [D] Vitamin K

2. Which mineral is essential for formation of haemoglobin in blood?

[A] Calcium [B] Magnesium [C] Iron [D] Zinc

3. Which food preservation method uses salt or sugar to draw out moisture?

[A] Curing [B] Canning [C] Drying [D] Smoking

4. Which fatty acid is essential for human health and must be obtained from the diet?

[A] Monounsaturated fatty acids [B] Saturated fatty acids

[C] Trans fatty acids [D] Omega-3-fatty acids

5. What is the process of removing water from food called?

[A] Fermentation [B] Pasteurization [C] Dehydration [D] Emulsification

6. What is the main purpose of blanching vegetables before freezing them?

[A] Reduce cooking time [B] Enhance color and flavor

[C] Kill bacteria and other pathogens [D] Inactivate enzymes that cause spoilage

7. Which food preservation method is based on low temperatures?

[A] Freezing [B] Canning [C] Drying [D] Smoking

8. What is an enzyme?

[A] A type of lipid [B] A biological catalyst

[C] A type of protein [D] A type of carbohydrate

9. Which amino acid contains sulfur atom and forms disulphide bonds?

[A] Glycine [B] Cysteine [C] Alanine [D] Serine

10. What type of bond links amino acids together in a protein chain?

[A] Hydrogen bonds [B] Disulfide bonds [C] Peptide bonds [D] Ionic bonds

11. Which type of fatty acid contains no double bonds between carbon atoms?

[A] Monounsaturated [B] Polyunsaturated [C] Tran-fat [D] Saturated

12. Which of the following is a disaccharide?

[A] Fructose [B] Sucrose [C] Starch [D] Glucose

13. What is the smallest unit of life?

[A] Cell [B] Tissue [C] DNA [D] None of these

14. When is the International Food Day Celebrated?

[A] October 08 [B] June 16 [C] January 30 [D] October 16.

15. Sucrose is a disaccharide made up of _____ and _____ .

[A] Fructose and galactose [B] Glucose and fructose

[C] Glucose and galactose [D] None of these

16. What is the primary purpose of using sulfur dioxide in food preservation?

[A] To increase the protein content [B] To add a sweet flavor

[C] To inhibit microbial growth and preserve color [D] To enhance the texture

17. What is the chemical structure of a triglyceride?

[A] Glycerol and three fatty acids [B] Glycerol and two fatty acids

[C] Glycerol and one fatty acid [D] Glycerol and four fatty acids

18. Which pigment is responsible for the green color in plants?

[A] Carotene [B] Chlorophyll [C] Anthocyanin [D] Betalain

19. Which sugar is commonly found in milk?

[A] Glucose [B] Fructose [C] Lactose [D] Maltose

20. What is the main role of water in food chemistry?

[A] Provide sweetness [B] Enhance flavor [C] Serve as a solvent [D] Act as a preservative.

B. **Write 'T' if the statement is true and 'F' if it is false**. (*1 mark each*).

1. Simple lipids contain two types of components (a fatty acid and an alcohol).

2. Oils are triglycerides that are solids at room temperature.

3. Carbohydrates are also known as saccharides.

4. Starch is an example of disaccharide.

5. Lipids are soluble in non-polar solvents, like ether, chloroform etc.

6. Proteins are made up of amino acids.

7. Sucrose is made up of glucose and galactose.

8. Homogenizer in food processing is to create a uniform mixture by breaking down particles.

9. Nicolas Appert is regarded as the father Canning.

10. Plant proteins do not contain a better balance of essential amino acids.

11. Animal sources are low quality proteins.

12. Sugar and salt are examples of preservatives.

13. Glycine is the simplest amino acid.

14. Peptide bond is present in lipids.

15. Enzymes are protein in nature.

16. Rancidity is mainly concerned with protein.

17. Albumin is the most common protein.

18. The primary function of antioxidants in food is to prevent oxidation.

19. Acid solutions have a pH above 7.

20. Bound water is easily obtained from food.

Q.no.2 Explain why food processing is really an integrated approach from farm to table? What step in the chain would a Food Scientist be most involved? (20)

Q.no.3 Food deterioration can be caused for a number of reasons. What are the causes and provide examples? (20)

Q.no.4 Food processing is a set of unit operations designed to produce edible products. What are the reasons for processing foods? Does the process necessarily preserve the food? (20)

Q.no.5 What factors affect microorganism growth and how? (20)

Q.no.6 Lab related - Within a product type, did products have the same properties? For example, were the pH and titratable acidity the same between fruits and vegetables? Explain. What or how can pH and titratable acidity be used by the food industry? (20)

Q.no.7 In your lab experience, how did product category generally affect water activity? Was water content and water activity related to each other? (20)