Total number of printed pages:02 **Programme(D)/IV/DFET402**

2023

BASICS OF FOOD CHEMISTRY

Full Marks: 100

Time: Three hours

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

*Answer **any five** questions.*

1.	a)	Define bound water. Explain the significance of water activity in food quality.	2+4=6
	b)	Show the removal of water from monosaccharide molecules resulting in the formation of disaccharide.	4
	c)	Write the important functions of protein.	4
	d)	What are fatty acids? Write three important characteristics of fatty acids.	2+4=6
2.	a)	Define water activity. Explain the relationship between moisture content and water activity?	2+4=6
	b)	What are D and L isomers? Show the structure of D and L glyceraldehyde.	2+2=4
	c)	What is peptide bond? Show how peptide bond is formed?	2+4=6
	d)	What are food additives? Explain the role of food additives.	2+2=4
3.	a)	Classify oligosaccharide giving suitable examples.	6
	b)	Explain the consequences of caramelization.	4
	c)	What products are formed by hydrolysis of lactose? Is maltose a reducing sugar?	4
	d)	Write the tertiary structure of protein.	6
4.	a)	Explain the difference between monounsaturated and a polyunsaturated fat?	6
	b)	Define essential amino acid giving suitable examples	4
	c)	Compare cis-fat with trans-fat	6
	d)	How can rancidity be prevented?	4
5.	a)	Define the following terms:	2x5 =10

i) Rancidity

ii) Amino acids

iii) MCFA

iv) Polypeptide

v) Hexose sugar

b) What are artificial flavouring agents? Give examples. 4

c) Explain SCFA, LCFA and VLCFA. 6

6. a) Distinguish between: 3x3=9

i) Homopolysaccharide and Hetero-polysaccharide

ii) Reducing and non-reducing sugar

iii) Fats and Oils

b) Define ester bond. How are triglycerides formed? 6

c) Explain the mutarotation of glucose. 5

7. Write short notes on: (any four) 4x5=20

i) Alpha –helix structure of protein

ii) Saponification

iii) Maillard reaction

iv) Protein denaturation

v) Anticaking agents