23FPB421N /23FPB421

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BVoc DEGREE EXAMINATION MAY 2025
(Fourth Semester)

Branch- **FOOD PROCESSING AND TECHNOLOGY**

FOOD CHEMISTRY

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Select the components that contribute to water binding in food. a) Surface tension b) Hydrogen bonding c) Freezing point d) Refractive index	K1	CO1
	2	Infer the property of food that affects its ability to flow. a) Surface tension b) Viscosity c) Refractive index d) Specific heat	K2	
2	3	Which of the following is a reducing sugar? a) Sucrose b) Fructose c) Starch d) Cellulose	K1	CO2
	4	Show the sugar alcohol produced when glucose is reduced. a) Mannitol b) Sorbitol c) Xylitol d) Erythritol	K2	
3	5	Choose a physical property that sets the smoke point of fat. a) Fire point b) Smoke point c) Flash point d) Refractive index	K1	CO3
	6	Interpret the chemical process that converts vegetable oil into margarine. a) Hydrolysis b) Hydrogenation c) Interesterification d) Oxidation	K2	
4	7	Recall the technique used to separate the proteins based on their charge. a) Osmotic pressure b) Electrophoresis c) Sedimentation d) Denaturation	K1	CO4
	8	Infer the type of protein that includes a nonprotein prosthetic group. a) Simple protein b) Conjugated protein c) Derived protein d) Transport protein	K2	
5	9	What happens to chlorophyll when cooked in acidic conditions? a) Turns bright green b) Becomes brown c) Converts to pheophytin d) Remains unchanged	K1	CO5
	10	Show the figment responsible for the colour of beetroot. a) Anthocyanin b) Betalain c) Lycopene d) Chlorophyll	K2	

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain any five physical properties of food with examples.	K2	CO1
		(OR)		
	11.b.	Outline the different types of water exist in food.		
2	12.a.	State the importance of the Maillard reaction in food chemistry.	K3	CO2
		(OR)		
	12.b.	Explain how the carbohydrates can influence food preparation.		
3	13.a.	Compare the saponification number, acid number, and iodine number of oil/ fat.	K4	CO3
		(OR)		
	13.b.	Categorize the effects of polymerization on frying oils.		
4	14.a.	Illustrate on the importance of hydration and ion binding to proteins.	K3	CO4
		(OR)		
	14.b.	Enumerate and explain the four protein structure levels using examples.		
5	15.a.	Describe the structural characteristics of chlorophyll and analyze its changes during cooking.	K4	CO5
		(OR)		
	15.b.	Explain the flavor components present in fruits and vegetables.		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Elucidate the different types of colloidal dispersions in food and their applications.	K1	CO1
2	17	Explain the structure and chemical properties of glucose, fructose, and sucrose.	K2	CO2
3	18	Identify the different types of lipids and explain their functions.	K3	CO3
4	19	Categorize the functional properties of proteins in food systems.	K4	CO4
5	20	Examine the classification, structure, and functional role of food pigments.	K4	CO5

Z-Z-Z END