Daffodil International University

Department of Nutrition and Food Engineering
Faculty of Health and Life Sciences
B.Sc. in Nutrition and Food Engineering
Midterm Examination Summer 2026

Course Code: 0711-2101
Level and Term: L-2, T-1
Time: 1 hour 30 minutes
Section: 252 All
Course Title: Food Chemistry
Course Teacher Initials: JR, MSZ, DMAU
Total Marks: 25

Maintaining the order of the questions is highly appreciated

				Marks
1	(a)	Define food chemistry with two importance in food safety.	[CLO1,PLO1,C1]	2
	(b)	Suppose you are the quality control officer of Amar Food. As a quality control officer, identify the determinants of quality foods.	[CLO1,PLO1,C3]	3
2	(a)	Discuss the physical properties of water.	[CLO1,PLO1,C1]	2
	(b)	Calculate the water activity of milk powder at 25°C temperature. The partial vapor pressure of water from the milk powder (P) is 15.47 mmHg, and the saturated vapor pressure of pure water (P_o) at 25°C is 23.8 mmHg. Draw a conclusion on your answer whether the milk powder is in the category of low, intermediate, or high-moisture foods.	[CLO1,PLO1,C4]	3
3	(a)	Construct the water activity and reaction rate relationship graph for food stability.	[CLO1,PLO1,C3]	2
	(b)	How does hydrogenation occur in vegetable oils, and how does it change the texture and shelf stability of food products?	[CLO1,PLO1,C3]	3
4	(a)	What is saturated and unsaturated fatty acids?	[CLO1,PLO1,C2]	2
	(b)	Identify the significance of the following tests in fats: (i) Acid Value (ii) Peroxide Value (iii) Saponification Value	[CLO1,PLO1,C3]	3
5	(a)	Define carbohydrates with example.	[CLO1,PLO1,C1]	1
	(b)	What do you understand by epimer and isomer of sugar? Provide one example each of an epimer and an isomer of sugar, and draw their structures.	[CLO1,PLO1,C3]	2
	(c)	Differentiate between amylose and amylopectin based on their structural properties.	[CLO1,PLO1,C4]	2