



Daffodil International University

Department of Nutrition and Food Engineering
Faculty of Health and Life Sciences
B. Sc. in Nutrition and Food Engineering
Final Examination-Spring' 25

Course Code: 0711-2101

Course Title: Food Chemistry

Level and Term: L-2, T-1 Section: 241 All

Course Teacher Initials: DNS, ZF, MS

Time: 2 hours

Total Marks: 40

Splitting any answer is strictly prohibited

		Marks
1 (a)	How are disaccharides formed? Provide examples using sucrose and lactose. [CLO1,PLO1,C3]	2
(b)	Illustrate any two possible epimers of D-glucose. [CLO1,PLO1,C3]	2
(c)	Potato or rice becomes soft after boiling but tends to harden again after cooling (aging). Explain this phenomenon based on the structure of carbohydrates. [CLO1,PLO1,C4]	4
2 (a)	Describe the role of emulsifying and thickening agents in food manufacturing with suitable examples. [CLO2,PLO2,C2]	4
(b)	State the purpose of adding food additives in product formulation and list the potential health concerns associated with their use. [CLO2,PLO2,C1]	4
3. (a)	What are the functional roles of Sodium, Potassium, Aluminum, and Iron in food processing? [CLO2,PLO2,C1]	4
(b)	Briefly explain the stability and degradation of Vitamin A, D, E & K during food processing. [CLO2,PLO2,C2]	4
3. (a)	Analyze the key stages of the Maillard reaction and summarize its overall reaction scheme with simplified interpretation. [CLO3,PLO2,C4]	4
(b)	Choose some strategies to inhibit non-enzymatic browning. [CLO3,PLO2,C3]	4
5 (a)	Classify minerals based on the necessity of the human body. [CLO2,PLO2,C2]	2
(b)	Define E codes and ADI in the context of food additives. [CLO2,PLO2,C1]	2
(c)	Explain how stabilizing agents work in food systems. [CLO2,PLO2,C3]	2
(d)	A food company reports lump formation in its powdered drink mix during storage. Suggest suitable additives to solve this issue and explain their functions. [CLO2,PLO1,C4]	2