Name: **Enrolment No:**	

UPES

End Semester Examination, December 2024

Course: Fundamentals of Food Science — **Semester: I**

Program: BSc-Food, Nutrition, and Dietetics — **Time: 3 Hours**

Course Code: HSND1002 — **Max. Marks: 100**

Instructions: Read all the questions carefully

S. No.	Section A Short answer questions/MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q1	Which of the following methods uses only dry heat? A. Poaching B. Roasting C. Steaming D. Blanching	1.5	CO-1
Q2	Identify the monounsaturated fatty acid (MUFA). A. Lauric acid B. Palmitic acid C. Oleic acid D. Stearic acid	1.5	CO-1
Q3	Identify the enzyme in brassica vegetables responsible for transforming glucosinolates into isothiocyanate compounds. A. Polyphenol oxidase B. Myrosinase C. Lipase D. Ethylene	1.5	CO-1
Q4	Which type of fat is considered the healthiest? A. Saturated fat B. Trans fat C. Monounsaturated fat D. Polyunsaturated fat	1.5	CO-1
Q5	Enlist any of three S-containing flavor compounds found in the garlic.	1.5	CO-2
Q6	Which of the following nutritional changes take place during germination? A. Increase in vitamins B. Reduction in anti-nutrients C. Enhanced enzymatic activity	1.5	CO-2

	D. All of the above		
Q7	Whey is abundant in proteins but lacks significant amounts of lactose and minerals (A-True; B-false).	1.5	CO-2
Q8	In cereal grain, …….. layer is sandwiched between endosperm and bran. A. Pericarp B. Aleurone layer C. Scutellum D. Cross-layer	1.5	CO-2
Q9	Identify the anti-nutrient in cereals and pulses that binds to minerals, reducing their bioavailability. A. Lectins B. Phytate and Tannins C. Cyanogenic glycosides D. Alkaloids	1.5	CO-3
Q10	During the parboiling process, which of the following steps is essential for nutrient retention? A. Soaking B. Steaming C. Drying D. Milling	1.5	CO-3
Q11	Identify the incorrect pair. A. Myoglobin-pink/red color of meat. B. Ooporphyrins-brown color to the eggshell. C. Xanthophylls-Yellow/orange color of egg yolk. D. Anthocyanins- Red color of beetroots.	1.5	CO-4
Q12	Identify the incorrect statement about milk pasteurization. A. The holding system consists of heating the milk to a temperature usually 65°C and holding it for 30 minutes. B. The HTST method involves heating the milk to at least 72 °C for 5 minutes. C. The HTS system results in a complete pasteurization of milk at a high temperature of 140–150°C for 2–5 seconds. D. The alkaline phosphatase enzyme activity is commonly used as an indicator to assess inadequate processing.	1.5	CO-4
Q13	The following process stabilizes newly formed milk fat globules during milk homogenization. A. Fat globule breakdown	1.5	CO-4

	B. Adsorption of proteins or lipoproteins C. Loss of original membrane D. All		
Q14	Identify the incorrect statement about egg white protein. A. Ovalbumin is the major protein in egg whites. B. Avidin binds to biotin and makes the vitamin unavailable for absorption. C. Lysozymes have bactericidal properties. D. Cooking causes a significant decrease in the nutritional quality of egg white protein.	1.5	CO-4
Q15	Fill in the blank: The pungency of chili peppers is primarily due to ……..	1.5	CO-5
Q16	Fill in the blank: The chief proteolytic enzyme present in meat is ……., which develops tenderness in meat during aging.	1.5	CO-5
Q17	Identify the sugar that has the least sweetness on the relative sweetness scale. A. Sucrose B. Fructose C. Glucose D. Lactose	1.5	CO-5
Q18	Name the two proteolytic enzymes found in fruits.	1.5	CO-5
Q19	Name any two varieties of coffee grown globally.	1.5	CO-5
Q20	Identify the end product of glucose fermentation by lactobacillus. A. Lactic acid B. Ethanol C. Propionic acid D. Butyric acid	1.5	CO-5
Section B (4Qx5M=20 Marks)			
Q1	Describe the protein composition of egg white and egg yolk.	5	CO-1
Q2	Explain how fruit ripening influences the texture and sweetness of fruits.	5	CO-2
Q3	What are the various anatomical elements that constitute the structure of an egg?	5	CO-3
Q4	Discuss the health benefits of consuming fish and shellfish.	5	CO-4
Section C (2Qx15M=30 Marks)			
Q1	Discuss various egg quality parameters in detail (7 marks). Explain how these parameters are evaluated (8 Marks).	15	CO-4

Q2	What is rigor mortis? (3 marks). Explain how it influences the tenderization of meat (5 marks). Describe the various methods used to tenderize meat (7 marks).	15	CO-5
Section D (2Qx10M=20 Marks)			
Q1	Describe the enzymatic browning of fruits and vegetables.	10	CO-2
Q2	Explain the role of rennet (Rennin or Chymosin) in milk coagulation (6 marks), and describe the factors affecting the coagulation of milk (4 marks).	10	CO-3