


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	What is the primary function of carbohydrates in the human body? A. Energy production B. Building cell membranes C. Enhancing muscle strength D. Regulating body temperature	1.5	CO-1
Q2	Which type of fat is considered the healthiest? A. Saturated fat B. Trans fat C. Monounsaturated fat D. Polyunsaturated fat	1.5	CO-1
Q3	Which food is the best source of very long-chain (VLC) omega-3 fatty acids? A. Olive oil B. Salmon C. Avocado D. Almonds	1.5	CO-1
Q4	Which of the following foods is a complete protein source? A. Rice B. Lentils C. Eggs D. Bread	1.5	CO-1
Q5	Which pigment is responsible for the red color of beetroots?	1.5	CO-2
Q6	Name any two varieties of coffee grown globally.	1.5	CO-2
Q7	Fill in the blanks: The pungency of chili is due to	1.5	CO-2
Q8	Identify the sugar that has the least sweetness on the relative sweetness scale. A. Sucrose B. Fructose C. Glucose D. Lactose	1.5	CO-2
Q9	Identify the end product of glucose fermentation by yeast A. Lactic acid	1.5	CO-2

	<p>B. Ethanol C. Propionic acid D. Butyric acid</p>		
Q10	Fill in the blank: is a naturally occurring chemical compound found in the spice turmeric, responsible for the vibrant yellow color of turmeric.	1.5	CO-2
Q11	Which of the following nutritional changes take place during germination? A. Increase in vitamins B. Reduction in anti-nutrients C. Enhanced enzymatic activity D. All of the above	1.5	CO-3
Q12	Egg white and egg yolk white both contain a good amount of proteins. However, fats are dominantly found in yolk (A-True; B-false).	1.5	CO-3
Q13	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-3
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. Lysozyme has bactericidal properties. D. Cooking causes a significant decrease in the nutritional quality of egg white protein.	1.5	CO-3
Q15	Name any two proteolytic enzymes found in fruits.	1.5	CO-4
Q16	Fill in the blank: is an enzyme that plays a crucial role in modifying pectin, a complex polysaccharide found in the cell walls of plants.	1.5	CO-4
Q17	Whey protein contains significant levels of: A. Lipids B. Minerals C. Lactose D. Proteins	1.5	CO-4
Q18	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.	1.5	CO-5

	D. The activity of alkaline phosphatase enzyme is commonly used as an indicator to assess inadequate processing.		
Q19	Bitterness in citrus fruits can be attributed to flavanone glycosides (A-True; B-false).	1.5	CO-5
Q20	The following process stabilizes newly formed milk fat globules during milk homogenization. A. Fat globule breakdown B. Adsorption of proteins or lipoproteins C. Loss of original membrane D. All	1.5	CO-5
Section B (4Qx5M=20 Marks)			
Q1	Explain how the enzymatic breakdown of protopectin during ripening influences the texture of fruits.	5	CO-1
Q2	Describe the various steps involved in the processing of milk.	5	CO-2
Q3	What are the health-beneficial compounds found in fruits and vegetables?	5	CO-3
Q4	Discuss the health benefits of consuming fish and shellfish.	5	CO-4
Section C (2Qx15M=30 Marks)			
Q1	Explain the role of rennet (Rennin or Chymosin) in milk coagulation, and describe the factors affecting milk coagulation.	15	CO-4
Q2	What is rigor mortis? (5 marks). Explain how it influences the tenderization of meat (5 marks). Describe the various methods used to tenderize meat (5 marks).	15	CO-5
Section D (2Qx10M=20 Marks)			
Q1	Describe the enzymatic browning of fruits and vegetables and explain how it can be controlled.	10	CO-2
Q2	What are the quality parameters of an egg, and how are these parameters evaluated?	10	CO-3