

Name:	
Enrolment No:	

UPES
End Semester Examination, May 2024

Course: Human Nutrition	Semester : II
Program: M.Sc. Nutrition and Dietetics	Duration : 3 Hours
Course Code: HSND7003	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 nutrition?	1.5	CO1
Q2	How is nutritional status typically assessed? a. Through subjective feelings b. Based on BMI c. Using a comprehensive approach with multiple assessment indicators d. Reliance on personal dietary preferences	1.5	CO1
Q3	Safety margins in RDA are designed to account for individual variations and prevent deficiencies. a. True b. False	1.5	CO1
Q4	What does Adequate Intake (AI) represent in dietary guidelines? a. The maximum amount of nutrient that can be safely consumed daily. b. The recommended daily amount of a nutrient, based on observed or experimentally determined approximations. c. The minimum amount of nutrients required for survival. d. The amount of a nutrient that should be obtained only from dietary supplements.	1.5	CO1
Q5	Nutritional status refers to: a. The amount of food consumed daily b. The overall condition of one's health in relation to diet c. The availability of food in a region d. The number of calories burned during exercise	1.5	CO1
Q6	What is the primary focus of a food frequency questionnaire? a. Identifying acute malnutrition b. Estimating nutrient intake over a period c. Assessing body composition d. Measuring biochemical markers	1.5	CO1
Q7	What is the primary form of vitamin K synthesized by bacteria in the human gut?	1.5	CO2

	<ul style="list-style-type: none"> a. Phylloquinone b. Menaquinone c. Menadione d. Naphthoquinone 		
Q8	<p>Vitamin K is essential for the synthesis of:</p> <ul style="list-style-type: none"> a. Collagen b. Hemoglobin c. Prothrombin and other clotting factors d. Insulin 	1.5	CO2
Q9	<p>Which of the following is a primary function of vitamin E?</p> <ul style="list-style-type: none"> a. Regulating calcium levels in the blood b. Enhancing iron absorption c. Protecting cell membranes from oxidative damage d. Promoting blood clotting 	1.5	CO2
Q10	<p>What is the essential cofactor associated with niacin?</p> <ul style="list-style-type: none"> a. FAD b. NAD c. Coenzyme A d. Pyridoxal phosphate 	1.5	CO2
Q11	<p>Which organ converts inactive vitamin D into its active form?</p> <ul style="list-style-type: none"> a. Liver b. Kidneys c. Pancreas d. Small intestine 	1.5	CO2
Q12	<p>Which of the following factors inhibits the absorption of both calcium and iron in the body?</p> <ul style="list-style-type: none"> a. Vitamin C b. Vitamin E c. Lactose d. Phytates and oxalates 	1.5	CO2
Q13	<p>Which term is used to describe amino acids that the body cannot synthesize and must be obtained from the diet?</p> <ul style="list-style-type: none"> a. Dispensable amino acids b. Conditionally essential amino acids c. Non-essential amino acids d. Indispensable amino acids 	1.5	CO2
Q14	State two key differences between saturated and unsaturated fatty acids.	1.5	CO2
Q15	<p>Which organ is primarily responsible for regulating blood glucose concentration?</p> <ul style="list-style-type: none"> a. Liver b. Pancreas c. Kidneys d. Small intestine 	1.5	CO2
Q16	Which of the following population groups is at increased risk of PEM?	1.5	CO3

	<ul style="list-style-type: none"> a. college athletes b. the elderly c. obese individuals d. adolescents 		
Q17	<p>In conditions of dehydration, ADH secretion is:</p> <ul style="list-style-type: none"> a. Increased b. Decreased c. Unaffected d. Inhibited 	1.5	CO3
Q18	<p>What is carbohydrate counting used for in diabetes management?</p> <ul style="list-style-type: none"> a. To restrict carbohydrate intake b. To monitor blood glucose levels c. To calculate insulin dosage d. To estimate fiber intake 	1.5	CO3
Q19	<p>Identify three significant manifestations of clinical deficiency of Vitamin D in human body.</p>	1.5	CO3
Q20	<p>What is the term used to describe the process by which proteins lose their structure and function due to heat or chemical exposure?</p> <ul style="list-style-type: none"> a. Denaturation b. Hydrolysis c. Glycation d. Oxidation 	1.5	CO3
<p>Section B (4Qx5M=20 Marks)</p>			
Q1	<p>What do you understand by dietary fiber? Discuss the various types of resistant starch along with their sources.</p>	5	CO2
Q2	<p>Describe the mechanism by which vitamin D facilitates calcium absorption in the human body.</p>	5	CO2
Q3	<p>Discuss the factors contributing to the regulation of nitrogen balance in the human body.</p>	5	CO2
Q4	<p>Explain the relationship between neural tube defects and the role of folic acid in its prevention.</p>	5	CO2
<p>Section C (2Qx15M=30 Marks)</p>			
Q1	<ul style="list-style-type: none"> a. Compare and contrast fat-soluble and water-soluble vitamins, highlighting their key differences. b. Elucidate the process of blood clotting and elucidate the specific role played by vitamin K in this mechanism using an illustration. c. Illustrate the mechanism by which vitamin D facilitates calcium absorption in the intestine. 	15 (5 marks × 3)	CO3
Q2	<ul style="list-style-type: none"> a. Illustrate the process of emulsification of fatty acids. b. Compare the absorption of short-chain triglycerides (SCTs) and medium-chain triglycerides (MCTs) with long chain triglycerides in the human digestive system. 	15 (7.5 marks × 2)	CO4

Section D
(2Qx10M=20 Marks)

Q1	Explain the hormonal regulation of water and electrolyte balance in the human body.	10	CO3
Q2	<ol style="list-style-type: none">1. Emily sets up her camera in a dimly lit room to capture the ambiance of the scene. As she waits for her eyes to adjust to the low light, she notices changes in her vision. Describe the normal physiological changes that occur in the eye while they are adapting to dim light.2. Ashita is following a strict low-fat diet to reduce weight. She is also taking fat-soluble vitamin supplements. Discuss the potential implications of this dietary approach on the absorption of fat-soluble vitamins.	10 (5 marks × 2)	CO4