

Name:	
Enrolment No:	

**UPES**  
**End Semester Examination, December 2023**

**Course: Principle of Nutrition** **Semester : III**  
**Program: B.Sc. (Food, Nutrition and Dietetics)/**  
**Integrated (B.Sc.) - (M.Sc.) Nutrition and Dietetics** **Duration : 3 Hours**  
**Course Code: HSCC2015** **Max. Marks : 100**

**Instructions: Read all the questions carefully.**

<b>Section A</b>			
S. No.	Short answer questions/ MCQ/T&F (20Qx1.5M = 30 Marks)	Marks	COs
Q1	Define the science of 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	State any three factors that commonly influence individuals' food choices.	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	What is the primary reason for incorporating a safety margin in the establishment of RDAs? a. To encourage overconsumption of nutrients. b. To account for individual variations in nutrient requirements. c. To accommodate dietary preferences and habits. d. To discourage the use of dietary supplements.	1.5	CO1
Q6	What is the primary principle underlying indirect calorimetry? a. Measurement of heat production b. Analysis of respiratory gases c. Calculation of energy expenditure d. Evaluation of metabolic rate	1.5	CO1
Q7	Important lifestyle modifications for preventing hypertension include _____. a. maintaining a healthy BMI.	1.5	CO3

	<ul style="list-style-type: none"> <li>b. eating a diet rich in potassium</li> <li>c. not smoking</li> <li>d. all the above</li> </ul>		
Q8	<p>What is the primary form of vitamin K synthesized by bacteria in the human gut?</p> <ul style="list-style-type: none"> <li>a. Phylloquinone</li> <li>b. Menaquinone</li> <li>c. Menadione</li> <li>d. Naphthoquinone</li> </ul>	1.5	CO2
Q9	<p>What is hyponatremia?</p>	1.5	CO2
Q10	<p>What is the active form of vitamin D in the body?</p> <ul style="list-style-type: none"> <li>a. Vitamin D2</li> <li>b. Vitamin D3</li> <li>c. Calcitriol</li> <li>d. Ergocalciferol</li> </ul>	1.5	CO2
Q11	<p>What is the essential cofactor associated with niacin?</p> <ul style="list-style-type: none"> <li>a. FAD</li> <li>b. NAD</li> <li>c. Coenzyme A</li> <li>d. Pyridoxal phosphate</li> </ul>	1.5	CO2
Q12	<p>Which class of drugs inhibit or limit the absorption of calcium and folic acid in human body?</p>	1.5	CO2
Q13	<p>Which of the following factors inhibits the absorption of both calcium and iron in the body?</p> <ul style="list-style-type: none"> <li>a. Vitamin C</li> <li>b. Vitamin E</li> <li>c. Lactose</li> <li>d. Phytates and oxalates</li> </ul>	1.5	CO3
Q14	<p>Which of the following population groups is at increased risk of PEM?</p> <ul style="list-style-type: none"> <li>a. college athletes</li> <li>b. the elderly</li> <li>c. obese individuals</li> <li>d. adolescents</li> </ul>	1.5	CO3
Q15	<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"> <li>a. Dispensable amino acids</li> <li>b. Conditionally essential amino acids</li> <li>c. Non-essential amino acids</li> <li>d. Indispensable amino acids</li> </ul>	1.5	CO2
Q16	<p>State two key differences between saturated and unsaturated fatty acids.</p>	1.5	CO2
Q17	<p>List down any 2 major functions of fats in your diet.</p>	1.5	CO2
Q18	<p>Name any three nutritional anemias.</p>	1.5	CO3
Q19	<p>Identify three significant manifestations of clinical deficiency of Vitamin D in human body.</p>	1.5	CO3

Q20	Name any three water soluble vitamins.	1.5	CO2
<b>Section B</b> <b>(4Qx5M=20 Marks)</b>			
Q1	Describe how the body internally regulates feelings of hunger, appetite, and fullness.	5	CO2
Q2	a. How do insulin and glucagon regulate blood glucose levels in the body? b. What is the significance of the respiratory quotient of macronutrients in determining diet composition?	5	CO2
Q3	Discuss the factors contribute to the regulation of nitrogen balance in the body?	5	CO2
Q4	Explain in detail the role of bile in lipid digestion.	5	CO2
<b>Section C</b> <b>(2Qx15M=30 Marks)</b>			
Q1	a. How does the absorption and risk of toxicity differ between certain fat-soluble vitamins and water-soluble vitamins? b. Elucidate the process of blood clotting and elucidate the specific role played by vitamin K in this mechanism. c. How does elevated lipids in the blood contribute to the development of atherosclerosis?	15 (5 marks × 3)	CO3
Q2	Samantha is a fitness enthusiast who recently transitioned to a plant-based diet. She is conscious of maintaining a high-quality protein intake to support her active lifestyle. As she plans her meals, several factors come into play that determine the quality of plant-based protein sources.  a. Define the key factors that determine the quality of a protein source and elaborate on their significance in assessing protein quality. b. Discuss how Samantha, as a vegetarian, can ensure she gets a well-balanced amino acid profile in her diet. c. Examine the role of protein digestibility in assessing the quality of plant-based proteins and suggest strategies for Samantha to enhance protein digestibility.	15 (5 marks × 3)	CO4
<b>Section D</b> <b>(2Qx10M=20 Marks)</b>			
Q1	Explain the hormonal regulation of water and electrolyte balance in the human body.	10	CO2
Q2	Explain how adhering to 'My plate model' contributes to maintaining nutritional balance and supporting overall health.	10	CO4