Name: Enrolment No:	

UPES

End Semester Examination, May 2025

Course: Human Nutrition — Semester: VI

Program: Integrated BSc-M.Sc. Nutrition and Dietetics — Time : 03 hrs.

Course Code: HSND3009 — Max. Marks: 100

Instructions: Please read all the questions carefully.

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q 1	Which hormone promotes glycogenolysis in the liver during fasting? A. Insulin B. Cortisol C. Glucagon D. Somatostatin	1.5	CO-2
Q 2	Which of the following conditions is most associated with protein-energy malnutrition (PEM)? A. Rickets B. Kwashiorkor C. Pellagra D. Xerophthalmia	1.5	CO-2
Q 3	Which statement about cholesterol is TRUE? A. It is only found in plant-based foods. B. It is required for the synthesis of sex hormones. C. It is an essential fatty acid. D. It is a type of unsaturated fat.	1.5	CO-1
Q 4	Identify the incorrect statement. A. An active transportation process absorbs most monosaccharides. B. Fructose is absorbed via facilitated diffusion. C. The small intestine is the primary site for carbohydrate absorption. D. The enzyme lactase has specificity for α-(1→4) galactose.	1.5	CO-1
Q 5	Identify the vitamin and their deficiency diseases mismatch. A. Vitamin A- Night blindness. B. Vitamin D- Rickets. C. Vitamin E- Conjunctival xerosis. D. Vitamin K- Prolonged blood coagulation.	1.5	CO-1

Q 6	Which of the following vitamins functions as an antioxidant? A. Vitamin K B. Vitamin B1 C. Vitamin E D. Vitamin D	1.5	CO-2
Q 7	The following is not the source of Vitamin B12. A. Fish and shellfish . B. Eggs and meat. C. Milk and yogurt. D. Green leafy vegetables.	1.5	CO-2
Q 8	Identify the deficiency disorder caused by the deficiency of Vitamin B3. A. Beriberi B. Glossitis C. Pellagra D. Microcytic anemia	1.5	CO-1
Q 9	The active coenzyme form of Vitamin B6 is: A. Pyridoxine B. Pyridoxal C. Pyridoxamine D. Pyridoxal phosphate (PLP)	1.5	CO-1
Q 10	Which vitamin plays a key role in the collagen synthesis? A. Vitamin K B. Vitamin C C. Vitamin A D. Vitamin D	1.5	CO-2
Q 11	Which of the following vitamins is involved in converting homocysteine to methionine? A. Vitamin B3 B. Vitamin B6 C. Vitamin B12 D. Vitamin C	1.5	CO-1
Q12	Which of the following has the highest glycemic index? A. Apple B. Brown rice C. White bread D. Lentils	1.5	CO-1
Q13	Lactose intolerance is due to the deficiency of which enzyme? A. Amylase B. Lactase C. Sucrase D. Maltase	1.5	CO-1
Q14	Trans fats increase the risk of cardiovascular disease by: A. Decreasing LDL. B. Increasing HDL. C. Increasing LDL and decreasing HDL.	1.5	CO-2

	D. Decreasing total cholesterol.		
Q15	A high biological value protein contains: A. A low digestibility. B. All essential amino acids in correct proportions. C. Only nonessential amino acids. D. A low nitrogen content.	1.5	CO-1
Q16	A negative nitrogen balance typically indicates: A. High protein intake. B. Anabolic state. C. Protein deficiency or catabolic state. D. Efficient protein utilization.	1.5	CO-1
Q 17	Identify the active form of Vitamin D. A. Cholecalciferol B. Ergocalciferol C. 25 - hydroxy vitamin D D. 1, 25 - dihydroxy vitamin D	1.5	CO-1
Q 18	Queen's Necklace is a disease caused by the deficiency of the following vitamin. A. Vitamin B3 B. Vitamin B5 C. Vitamin B7 D. Vitamin B9	1.5	CO-1
Q 19	Which enzyme is responsible for the breakdown of proteins into peptides in the stomach? A. Trypsin B. Pepsin C. Amylase D. Lipase	1.5	CO-3
Q 20	Which vitamin's absorption requires an intrinsic factor secreted by gastric parietal cells? A. Vitamin B2 B. Vitamin B6 C. Vitamin B12 D. Vitamin D	1.5	CO-2
Section B (4Qx5M=20 Marks)			
Q 21	What is complementary protein? Explain with suitable examples.	5	CO-1
Q 22	Explain the concept of nitrogen balance. Discuss various types of nitrogen balance in the body and factors influencing it.	5	CO-2
Q 23	How are lipoproteins classified based on their density? Provide a comparison of their key structural and functional differences.	5	CO-2

Q 24	Discuss the role of cholesterol in the body and differentiate between its beneficial and adverse effects on health.	5	CO-2
Section C (2Qx15M=30 Marks)			
Q 25	Summarize the key functions of fat-soluble vitamins and explain how their dietary sources relate to the deficiency disorders observed in different populations.	15	CO-4
Q 26	Classify carbohydrates based on their chemical structure and explain their roles in the body, including their importance for energy, metabolism, and overall health.	15	CO-2
Section D (2Qx10M=20 Marks)			
Q 27	Critically evaluate the methods used to assess food protein quality. Explain the parameters used for Food Protein Quality assessment.	10	CO-3
Q 28	Discuss the various steps involved in lipid digestion and absorption. Elaborate on the role of bile salts in lipid digestion and absorption.	10	CO-3