Name: **Enrolment No:**	

UPES

End Semester Examination, December 2023

Course: Introduction to Food Technology **Semester: I**

Program: B.Tech Food Technology **Duration : 3 Hours**

Course Code: HSFT1002 **Max. Marks: 100**

Instructions: All Questions are compulsory

SECTION A

S. No.	**Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)**	**30 Marks**	**CO**
1	Water is also known as a) Essential Nutrient b) Silent Nutrient c) Micronutrient d) None of the above	1.5 marks	**CO1**
2	Define balanced diet a) Take all nutrients in an adequate amount b) Take less amount of all nutrients c) Take an adequate amount of selective nutrients d) Take the excess amount of all nutrients	1.5 marks	**CO1**
3	Unit of Energy in dietary calculations a) Watt b) Calories c) Volt d) Horsepower	1.5 marks	**CO4**
4	What is a safety Factor? a) Less amount of nutrient consumption than RDA b) Same amount consumption as RDA c) Wear safety equipment d) Take slight more amount then RDA	1.5 marks	**CO1**
5	Which one is not a source of Energy a) Starch b) Calcium c) Butter d) Gluten	1.5 marks	**CO5**
6	What is the normal BMR range of an adult man? a) 25 to 28 Cal/m^2 body surface/h b) 45 to 48 Cal/m^2 body surface/h c) 35 to 38 Cal/m^2 body surface/h	1.5 marks	**CO1**

	d) 30 to 33 Cal/m^2 body surface/h		
7	Sulphur containing amino acid a) Glutamic acid b) Lysine c) Tryptophan d) Methionine	1.5 marks	**CO4**
8	Calculate the Body Mass Index of a man having 164 cm height and 71 kg weight? a) 24.81 b) 27.43 c) 21.47 d) 26.40	1.5 marks	**CO1**
9	Compositional difference between protein and carbohydrates, fats a) Carbon b) Hydrogen c) Oxygen d) Nitrogen	1.5 marks	**CO4**
10	Who first give term protein a) Luious Pasteur b) G.J. Mulder c) J.G Molder d) N.M Potter	1.5 marks	**CO1**
11	What is the conversion factor in protein? a) 100/carbohydrate content b) 100/hydrogen c) 100/nitrogen d) 100/oxygen	1.5 marks	**CO1**
12	Which amino acid is acidic in nature? a) Lysine b) Arginine c) Histidine d) Aspartic	1.5 marks	**CO5**
13	Mineral present in Thyroxine a) Iron b) Zinc c) Iodine d) Cobalt	1.5 marks	**CO5**
14	Mineral important for insulin function a) Zinc	1.5 marks	**CO1**

	b) Copper c) Cobalt d) Potassium		
15	Which mineral is Non-essential Trace elements? a) Iron b) Cobalt c) Selenium d) Boron	1.5 marks	**CO5**
16	Calcium deficiency in children leads to a) Osteoporosis b) Osteomalacia c) Rickets d) Osteoarthritis	1.5 marks	**CO5**
17	Vitamins associated with genetic regulation a) Vitamin A and D b) Vitamin E and K c) Vitamin C and B2 d) Vitamin E and C	1.5 marks	**CO1**
18	Retinol palmitate is a a) Esterified form of vitamin A b) Ethanoic form of vitamin A c) Ketonic form of vitamin A d) Aldehyde form of vitamin A	1.5 marks	**CO5**
19	What is the comparative biological activity of A2 in composition to A1 a) 60% b) 80% c) 40% d) 70%	1.5 marks	**CO1**
20	Sources of Ergocalciferol a) Mushroom b) Mango c) Chicken a) Both A and B	1.5 marks	**CO5**

SECTION B (4Qx5M=20 Marks)

Q	**Short Answer Type Question (5 marks each)**	**20 Marks**	**CO**
1	What is rate of rection? Factors affecting rate of rection? How it affects food?	**5**	**CO3**
2	What are recent trends in Food Science? Development in Food sector in India.	**5**	**CO4**
3	Why food and Nutrition is important for Human health? How is RDA associated with health?	**5**	**CO1**

4	Define carbohydrates? Classification of carbohydrates? Sources of carbohydrates?	**5**	**CO2**
SECTION C (2Qx15M=30 Marks)			
Q	**Two case studies 15 marks each subsection**	**30 Marks**	**CO**
1	Rats are fed with 5 gm of protein per day. After 28 days their weight increase from 60 g to 130 g. Protein in faeces of protein diet group rats is 30 g and in the protein-free diet, it is 7g. Protein in the urine of protein-free diet is 4 g and protein in the nitrogen-free group is 1 g. a) What is the Protein efficiency ratio and calculate it? b) Calculate Biological value c) Calculate Net protein utilisation.	**15**	**CO3**
2	If a Man carry out moderate physical activity with weight 65 kg and he consumes the following food materials: 100 g of wheat (75% CHO, 12 % protein, 3% fat), 200 ml standardised milk (protein 3%, CHO 5%, fat 4.5%), 30 g ghee(99.9% fat), 50 g pulses (protein 25%, CHO 60% and Fat 5%), 100 g apple (CHO 14%, protein 0.5% and fat 0.2%), 50 g potato (CHO 20%, Protein 2%, Fat 0.2), 50 g green leafy vegetable (20% CHO, 11% protein and 3.5% fat) and 120 g ethanol. a) Calculate the energy consumption and explain if he consumes a sufficient amount of energy? b) Elaborate about his protein requirement and he consumes the right amount of proteins?	**15**	**CO2**
	SECTION- D (2Qx10M=20 Marks)		
Q	**Long Answer type Questions (10 marks each)**	**20 Marks**	**CO**
1	a) What do you mean by fat-soluble vitamins? b) Describe the functions, RDA values, sources and their deficiency diseases of vitamin A, E and K?	**10**	**CO5**
2	a) Importance of lipids in nutrition? Describe lipid digestion & absorption? **b)** Describe vitamin D? Types of vitamin D, sources and deficiency disease?	**10**	**CO4**