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25NDU205/22NDU205N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Second Semester)

Branch – **NUTRITION, FOOD SERVICE MANAGEMENT & DIETETICS**

PRINCIPLES OF NUTRITION

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which factor contributes most to inter-individual variation in basal metabolic rate? (i) Lean Body Mass (ii) Body fat percentage (iii) Height alone (iv) Fluid intake	K1	CO1
	2	Direct calorimetry measures energy expenditure by assessing (i) Oxygen utilization (ii) Heat production by the body (iii) Carbon dioxide output (iv) Nitrogen excretion	K2	CO1
2	3	Resistant starch acts similar to ---------- (i) Starch (ii)protein (iii)Dextrin (iv)Dietary fiber	K1	CO2
	4	Fermentation of soluble fibre in the colon produces: (i) Alcohol (ii) Ketones (iii)SCFA (iv) Lactate	K2	CO2
3	5	Protein Digestibility Corrected Amino Acid Score (PDCAAS) evaluates protein quality based on: (i) Energy value (ii) Composition& digestibility (iii) Fat Content (iv) Protein quantity	K1	CO3
	6	Which lipid class forms the structural backbone of biological membranes? (i) Glycolipids (ii) Phosholipids (iii) Triglycerides (iv) Steroids	K2	CO3
4	7	The antioxidant function of Vitamin E primarily involves: (i)DNA synthesis (ii)Prevention of lipid peroxidation (iii)Collagen formation (iv)Calcium metabolism	K1	CO4
	8	Vitamin B12 deficiency leads to neurological symptoms due to impaired: (i) Fat digestion (ii) Myelin synthesis (iii) Calcium absorption (iv) Glycogen storage	K2	CO4
5	9	Non-heme iron absorption is enhanced by: (i) Phytates (ii) Polyphenols (iii) Ascorbic acid (iv) Calcium	K1	CO5
	10	Goitre results from impaired synthesis of: (i) Insulin (ii) Thyroid hormone (iii) Cortisol (iv) Growh Hormone	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Define Basal Metabolic Rate and explain factors affecting BMR.	K3	CO5
		OR		
	11.b.	Explain direct and indirect calorimetry for measuring energy expenditure.		
2	12.a.	Classify carbohydrates and explain their functions.	K2	CO2
		OR		
	12.b.	Describe dietary fibre types and physiological functions.		
3	13.a.	Explain digestion and utilization of lipids.	K2	CO2
		OR		
	13.b.	Discuss methods of evaluating protein quality.		
4	14.a.	Explain functions and deficiency symptoms of fat-soluble vitamins.	K5	CO3
		OR		
	14.b.	Describe the role of Vitamin C in human nutrition.		
5	15.a.	Discuss calcium–phosphorus ratio and its significance.	K5	CO3
		OR		
	15.b.	Explain functions and deficiency symptoms of iron.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Explain determination of energy requirements and factors affecting energy needs.	K2	CO2
2	17	Discuss water distribution, water balance, and importance of electrolytes in the body.	K2	CO2
3	18	Describe functions, digestion, requirements, and deficiency of proteins and Protein Energy Malnutrition (PEM).	K5	CO3
4	19	Discuss sources, functions, requirements, and deficiency of any four water-soluble vitamins .	K4	CO4
5	20	Explain functions, sources, requirements, and deficiency disorders of trace elements.	K4	CO4

Z-Z-Z END