SUBJECT: BIOCHEMISTRY & CLINICAL PATHOLOGY

COURSE: FINAL D.PHARM

UNIT 4 : VITAMINS & METABOLISM

TABLE 1: VERY SHORT ANSWER QUESTIONS (1–2 Marks)

S.No	Question Type	Question	Exam Mapping (with Year – examples)	Bloom's Level
1	Very Short Answer	Define vitamins.	TNMGRMU (2019), Pharma Aptitude Tests	Remember
2	Very Short Answer	Give two examples of fat-soluble vitamins.	TNMGRMU (2020), GPAT (2018)	Remember
3	Very Short Answer	Name the coenzyme form of Vitamin B1.	GPAT (2021), NIPER (2019)	Remember
4	Very Short Answer	What is RDA?	TNMGRMU (2018)	Remember
5	Very Short Answer	Name the pathway that produces ATP in cytoplasm.	GPAT (2020)	Remember
6	Very Short Answer	What is glycogen?	TNMGRMU (2021)	Remember
7	Very Short Answer	Name the end product of glycolysis.	GPAT (2019)	Remember
8	Very Short Answer	Define β-oxidation.	GPAT (2022)	Remember
9	Very Short Answer	What is ketone body?	Pharma Company Interview	Understand
10	Very Short Answer	Name any one disorder of amino acid metabolism.	TNMGRMU (2022)	Remember
11	Very Short Answer	What is oxidative phosphorylation?	GPAT (2021)	Understand
12	Very Short Answer	Name the site of Electron Transport Chain.	NIPER (2020)	Remember

TABLE 2: SHORT ANSWER QUESTIONS (3–5 Marks)

S.No	Question Type	Question	Exam Mapping (with Year – examples)	Bloom's Level
1	Short Answer	Classify vitamins with examples.	TNMGRMU (2020)	Understand
2	Short	Write sources and functions of	TNMGRMU (2021), Pharma	Understand

	Answer	Vitamin A.	Exams	
3	Short Answer	Explain deficiency diseases of Vitamin D.	GPAT (2019)	Understand
4	Short Answer	Outline the steps of glycolysis (without structures).	TNMGRMU (2022)	Understand
5	Short Answer	Explain regulation of blood glucose level.	GPAT (2020)	Apply
6	Short Answer	Write a short note on glycogen metabolism.	TNMGRMU (2019)	Understand
7	Short Answer	Explain β-oxidation of fatty acids in brief.	GPAT (2021)	Understand
8	Short Answer	What is ketoacidosis? Mention causes.	Pharma Company Exams	Apply
9	Short Answer	Write general reactions of amino acids.	TNMGRMU (2018)	Understand
10	Short Answer	Explain the significance of urea cycle.	GPAT (2022)	Apply
11	Short Answer	Write a short note on jaundice.	TNMGRMU (2020)	Understand
12	Short Answer	List steps involved in biological oxidation.	NIPER (2019)	Understand

TABLE 3: LONG ANSWER QUESTIONS (8–10 Marks)

S.No	Question Type	Question	Exam Mapping (with Year – examples)	Bloom's Level
1	Long Answer	Describe fat-soluble vitamins with sources, functions, deficiency diseases and RDA.	TNMGRMU (2019)	Analyze
2	Long Answer	Explain water-soluble vitamins with coenzyme forms and deficiency diseases.	TNMGRMU (2021)	Analyze
3	Long Answer	Describe glycolysis and its significance.	GPAT (2020), NIPER (2021)	Analyze
4	Long Answer	Explain TCA cycle and its importance in metabolism.	TNMGRMU (2022)	Analyze
5	Long Answer	Discuss lipid metabolism: β-oxidation, ketogenesis and ketolysis.	GPAT (2021)	Analyze
6	Long Answer	Explain disorders of lipid metabolism: fatty liver and hypercholesterolemia.	Pharma Company Exams	Evaluate
7	Long Answer	Describe urea cycle and disorders of ammonia metabolism.	GPAT (2019)	Analyze
8	Long Answer	Explain phenylketonuria and alkaptonuria.	TNMGRMU (2020)	Analyze
9	Long Answer	Describe Electron Transport Chain and oxidative phosphorylation.	NIPER (2022)	Analyze

TABLE 4: CASE-BASED QUESTIONS (Competency-Based)

S.No	Case-Based Question	Focus Area	Exam Mapping	Bloom's Level
1	A child shows night blindness and dry skin. Identify the deficient vitamin and explain its functions.	Vitamin A deficiency	TNMGRMU (CBME)	Apply
2	A diabetic patient has uncontrolled blood glucose. Explain the metabolic pathway involved.	Carbohydrate metabolism	GPAT (Clinical)	Apply
3	A patient with fruity breath and metabolic acidosis is admitted. Identify the disorder and explain its cause.	Ketoacidosis	Pharma Clinical Interview	Analyze
4	A newborn has high ammonia levels in blood. Which cycle is defective? Explain.	Urea cycle disorder	NIPER (2021)	Analyze
5	A patient presents with yellow discoloration of eyes and urine. Identify the condition and biochemical basis.	Jaundice	TNMGRMU (2022)	Apply
6	A child has intellectual disability due to enzyme deficiency in amino acid metabolism. Identify the disorder.	Phenylketonuria	GPAT (2020)	Analyze