SUBJECT: BIOCHEMISTRY & CLINICAL PATHOLOGY

COURSE: FINAL D.PHARM

UNIT 3 : NUCLEIC ACIDS & ENZYMES

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

Q. No	Question Type	Questions	Exam Mapping	Year (Trend)	Bloom's Level
1	Very Short	Define nucleic acids.	TNMGRMU	2018–2024	Remember
2	Very Short	Name any two purine bases.	TNMGRMU, GPAT	2019–2023	Remember
3	Very Short	Name any two pyrimidine bases.	TNMGRMU	2018–2024	Remember
4	Very Short	Define nucleoside with one example.	TNMGRMU	2020–2024	Remember
5	Very Short	What is a nucleotide?	TNMGRMU, GPAT	2019–2024	Remember
6	Very Short	Name the sugar present in DNA.	TNMGRMU	2018–2023	Remember
7	Very Short	Who proposed the DNA double helix model?	TNMGRMU, GPAT	2017–2024	Remember
8	Very Short	Define enzyme.	TNMGRMU, Pharma Industry	2018–2024	Remember
9	Very Short	What is IUB classification of enzymes?	TNMGRMU	2020–2024	Understand
10	Very Short	Define enzyme inhibitor.	TNMGRMU, GPAT	2019–2024	Remember

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

Q. No	Question Type	Questions	Exam Mapping	Year (Trend)	Bloom's Level
1	Short Answer	Explain purine and pyrimidine bases with examples.	TNMGRMU, GPAT	2019–2024	Understand
2	Short Answer	Differentiate between nucleoside and nucleotide.	TNMGRMU	2018–2024	Analyze
3	Short Answer	Write the structure and functions of RNA.	TNMGRMU, GPAT	2020–2024	Understand
4	Short Answer	List properties of enzymes.	TNMGRMU, Pharma Industry	2018–2024	Understand
5	Short Answer	Explain factors affecting enzyme activity.	TNMGRMU, GPAT	2019–2024	Apply
6	Short Answer	Classify enzymes according to IUB system.	TNMGRMU, NIPER	2020–2024	Understand
7	Short Answer	Explain competitive enzyme inhibition.	TNMGRMU, GPAT	2018–2024	Apply

8	Short Answer	Write pharmaceutical uses of enzymes.	TNMGRMU, Pharma Industry	2021–2024	Apply

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

Q. No	Question Type	Questions	Exam Mapping	Year (Trend)	Bloom's Level
1	Long Answer	Describe the structure of DNA based on Watson and Crick model with diagram.	TNMGRMU, GPAT	2018–2024	Understand
2	Long Answer	Explain components of nucleosides and nucleotides with suitable examples.	TNMGRMU	2019–2024	Understand
3	Long Answer	Discuss enzyme classification based on IUB and MB systems.	TNMGRMU, NIPER	2020–2024	Analyze
4	Long Answer	Explain the mechanism of action of enzymes (Lock & Key and Induced Fit theories).	TNMGRMU, GPAT	2018–2024	Analyze
5	Long Answer	Describe factors affecting enzyme activity in detail.	TNMGRMU, Pharma Industry	2019–2024	Apply
6	Long Answer	Discuss enzyme inhibitors and their therapeutic importance.	TNMGRMU, GPAT, NIPER	2021–2024	Evaluate
7	Long Answer	Explain therapeutic and pharmaceutical importance of enzymes with examples.	TNMGRMU, Pharma Industry	2020–2024	Apply

TABLE 4: CASE-BASED QUESTIONS (Application / Higher Order)

Q. No	Question Type	Case-Based Question	Exam Mapping	Year (Trend)	Bloom's Level
1	Case Based	A patient is prescribed **streptokinase** during myocardial infarction. Identify the type of enzyme and explain its therapeutic role.	TNMGRMU, Pharma Industry	2022–2024	Apply
2	Case Based	A drug reduces enzyme activity even at high substrate concentration. Identify the type of inhibition and justify.	GPAT, NIPER	2020–2024	Analyze
3	Case Based	A biotech lab stores enzymes at low temperature. Explain the reason based on enzyme properties.	TNMGRMU, Pharma Industry	2021–2024	Apply
4	Case Based	DNA mutation occurs due to base substitution. Identify whether purine or pyrimidine is involved and explain its effect.	GPAT, NIPER	2022–2024	Analyze
5	Case Based	A digestive disorder is treated using **pancreatin**. Explain its enzyme composition and function.	TNMGRMU, Pharma Industry	2020–2024	Apply