Code: 23BP203T

R23

B.Pharm I Year II Semester (R23) Supplementary Examinations March 2026

BIOCHEMISTRY

(B.Pharmacy)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	Explain Endergonic reactions.	2M
	(b)	What is the Michaelis-Menten equation?	2M
	(c)	Define gluconeogenesis and glycogenesis.	2M
	(d)	What is 5HT?	2M
	(e)	What is albinism?	2M
	(f)	Write the significance of ATP.	2M
	(g)	Hypercholesterolemia.	2M
	(h)	Write any two functions of nucleic acids.	2M
	(i)	Name sulfur-containing amino acids.	2M
	(j)	Define codons.	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	Discuss and detail about the Redox potential.	10M
	OR	
3	Write in detail about the classification of Proteins.	10M
4	Define Oxidative Phosphorylation. What is the cellular site of Oxidative phosphorylation?	10M
	OR	
5	Describe the Hexose Monophosphate shunt pathway and add a note on metabolic significance.	10M
6	Describe the Urea Cycle.	10M
	OR	
7	Write the conversion of cholesterol to Vitamin D3.	10M
8	Write about the biosynthesis of purine nucleotides.	10M
	OR	
9	How genetic code is used for amino acid coding and explain with wobbles hypothesis?	10M
10	Explain in detail about the clinical significance of Isoenzymes.	10M
	OR	
11	Explain Enzyme kinetics with Michaelis plot.	10M

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Code: 23BP203T

R23

B.Pharm I Year II Semester (R23) Regular & Supplementary Examinations September/October 2025

BIOCHEMISTRY

(B.Pharmacy)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a)	Define Biomolecules.	2M
(b)	What is the significance of the HMP shunt?	2M
(c)	Gout disease.	2M
(d)	What is Oxidative phosphorylation?	2M
(e)	Differentiation mRNA & tRNA.	2M
(f)	Define enthalpy and entropy.	2M
(g)	Write the inhibitors of ETC.	2M
(h)	Define coenzymes.	2M
(i)	Diabetes Mellitus.	2M
(j)	Write the significance of the Line-Weaver Burk plot.	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2 Define lipids. Classify lipids with examples. 10M

OR

3 Describe Adenosine triphosphate as an energy-rich compound. 10M

4 Describe the citric acid cycle with energetic. 10M

OR

5 Describe the Urea Cycle. 10M

6 Write about Jaundice and its types. 10M

OR

7 Explain the De novo synthesis of Palmitic acid. 10M

8 Biosynthesis of Purine nucleotide. 10M

OR

9 Explain the steps involved in the biosynthesis of pyrimidine nucleotide. 10M

10 Explain the coenzymes with examples. 10M

OR

11 Explain the mechanism of enzyme action. 10M

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Code: 23BP203T

R23

B.Pharm I Year II Semester (R23) Supplementary Examinations April/May 2025

BIOCHEMISTRY

(B.Pharmacy)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a)	List out the aromatic amino acids with structure.	2M
(b)	What is redox potential?	2M
(c)	How many ATPs are produced in the TCA cycle?	2M
(d)	Justify that the mitochondria are called the powerhouse of the cell.	2M
(e)	How the fatty acids are stored in the liver and adipose tissue?	2M
(f)	What are the metabolic disorders of the urea cycle?	2M
(g)	What are the functions of RNA polymerase?	2M
(h)	Write the importance of histone proteins in genome organization.	2M
(i)	What is the Km value in the enzyme activity?	2M
(j)	What are inducible enzymes?	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	(a)	Define fatty acids. Discuss the saturated and unsaturated fatty acids with examples.	5M
	(b)	What are nucleic acids? List out the components of nucleotides in the nucleic acids.	5M
		OR	
3	(a)	What is the significance of cAMP in hormonal action?	6M
	(b)	What is the difference between the endergonic and exergonic reaction?	4M
4	(a)	Discuss the synthesis of glucose from pyruvate.	6M
	(b)	List out the glycogen storage diseases with enzyme defects.	4M
		OR	
5	(a)	Describe the complexes involved in the electron transport chain for the delivery of NADH delivery.	6M
	(b)	Discuss the inhibitors of the electron transport chain.	4M
6	(a)	Write notes on the degradation of cholesterol.	4M
	(b)	Describe in detail about the steps involved the fattyacid synthesis.	6M
		OR	
7	(a)	Write notes on synthesis of thyroid hormones and melanin from tyrosine.	5M
	(b)	Write about the degradation of heme.	5M
8	(a)	Write about the translation process in the prokaryotes.	7M
	(b)	Explain the Watson and crick model of DNA.	3M
		OR	
9	(a)	Describe the synthesis of pyrimidine nucleotides.	7M
	(b)	Write about the synthesis of nucleotides from purines.	3M
10	(a)	What are enzymes? Give an outline classification of the enzymes.	5M
	(b)	Explain the various types of enzymatic regulation.	5M
		OR	
11	(a)	Write about the MichaelisMenten equation.	6M
	(b)	What are coenzymes? Write a role of coenzymes in the mode of enzyme action.	4M

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Code: 23BP203T

R23

B.Pharm I Year II Semester (R23) Regular Examinations September 2024

BIOCHEMISTRY

(B.Pharmacy)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a)	What are the four main types of biomolecules?	2M
(b)	What are high energy bonds?	2M
(c)	Write the conversion of pyruvate to acetyl CoA.	2M
(d)	What is the importance of HMP pathway?	2M
(e)	What are ketone bodies?	2M
(f)	Write about the deamination.	2M
(g)	What are the functions of DNA polymerase?	2M
(h)	Write about the degradation of uric acid.	2M
(i)	Define allosteric enzymes with examples.	2M
(j)	What is the relationship between enzyme activity and concentration of substrate?	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	(a)	Write the general structure of amino acids and classify the amino acids based on the polarity.	5M
	(b)	Differentiate the homo polysaccharides and hetero polysaccharides along with structure and functions.	5M
		OR	
3	(a)	Give a brief account on high energy compounds.	5M
	(b)	Describe the relationship between free energy, enthalpy and entropy.	5M
4	(a)	Justify that the Krebs cycle is the final common pathway for the oxidation of carbohydrates, and fats.	4M
	(b)	Describe the pentose pathway along with significance.	6M
		OR	
5	(a)	Describe the complexes involved in the electron transport chain for the delivery of FADH delivery.	5M
	(b)	Define oxidative phosphorylation. Discuss the chemiosmotic hypothesis.	5M
6	(a)	Define fattyacids. Explain the steps involved in the breakdown of fattyacids.	6M
	(b)	Discuss the disorders found in hypercholesterolemia.	4M
		OR	
7	(a)	How the urea is formed from an amino group of amino acids?	6M
	(b)	Discuss the disorders related to tyrosine metabolism.	4M
8	(a)	Explain the process of replication in prokaryotes.	7M
	(b)	Write about the types of RNA with functions.	3M
		OR	

Contd. in Page 2

9	(a)	Describe the steps in the Denovo pathway for the synthesis of purine nucleotides.	7M
	(b)	Discuss the gout disease and its treatment.	3M
10	(a)	Define enzyme. What are the factors that affect the enzyme activity?	5M
	(b)	What is enzyme inhibition? Write about the types of reversible inhibition.	5M
		OR	
11	(a)	Write about the Michaelis-Menten equation.	7M
	(b)	List out the enzymes involved in the diagnosis of liver and muscle disease.	3M

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