

B.Pharm I Year II Semester (R19) Regular Examinations November 2022

BIOCHEMISTRY

(For 2021 admitted batch only)

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- | | |
|--|----|
| (a) Define enthalpy and entropy. | 2M |
| (b) Define Bio molecules. | 2M |
| (c) Define gluconeogenesis. | 2M |
| (d) What is oxidative phosphorylation? | 2M |
| (e) Define ketone bodies. | 2M |
| (f) What are essential Amino Acids? | 2M |
| (g) What is transcription? | 2M |
| (h) Define codons. | 2M |
| (i) Write a note on isoenzymes. | 2M |
| (j) Write the therapeutic applications of enzymes. | 2M |

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

- | | |
|---|-----|
| 2 Describe the beta oxidation of fatty acids with energetics. | 10M |
| 3 Describe the citric acid cycle with energetic. | 10M |
| 4 Discuss about transcription. | 10M |

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

- | | |
|---|----|
| 5 Describe Adenosine triphosphate as an energy rich compound. | 5M |
| 6 Explain glycogenolysis. | 5M |
| 7 Write about diabetes mellitus. | 5M |
| 8 Describe about urea cycle. | 5M |
| 9 Describe catabolism of amino acids. | 5M |
| 10 Explain inhibitors of protein synthesis. | 5M |
| 11 Describe about Gout. | 5M |
| 12 Explain about coenzymes. | 5M |
| 13 Explain the mechanism of enzyme action. | 5M |

B.Pharm I Year II Semester (R19) Supplementary Examinations September 2022

BIOCHEMISTRY

(For 2019 & 2020 admitted batch only)

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Define endergonic reactions.
 - (b) Define cAMP.
 - (c) What is diabetes mellitus?
 - (d) What is the significance of HMP shunt?
 - (e) Define atherosclerosis.
 - (f) Define albinism.
 - (g) Write any two functions of nucleic acids.
 - (h) Name the bases present in DNA.
 - (i) Define coenzyme and give suitable examples.
 - (j) Classify enzymes.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

- 2 Explain the glycolysis pathway.
- 3 Briefly discuss the composition of DNA with a suitable diagram.
- 4 Define enzyme and discuss the various types of enzyme inhibition with suitable examples.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

- 5 Describe the relationship between free energy, enthalpy and entropy.
- 6 Write a detailed note on Hexose Monophosphate pathway.
- 7 Discuss about electron transport chain.
- 8 Explain Jaundice and its types.
- 9 Write the synthesis and significance of melatonin.
- 10 Write about biosynthesis of purine nucleotides.
- 11 Discuss about replication of DNA.
- 12 Explain enzyme kinetics with Michaelis plot.
- 13 Discuss the diagnostic applications of isoenzymes.

B.Pharm I Year II Semester (R19) Supplementary Examinations April/May 2022

BIOCHEMISTRY

(For 2020 admitted batches only)

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- Define bio molecules.
 - What is essential amino acid?
 - What is gluconeogenesis?
 - Write the energetic for glycolysis pathway.
 - What is atherosclerosis?
 - What is alkaptonuria?
 - Name the bases present in DNA.
 - Differentiate mRNA & tRNA.
 - What is isoenzyme?
 - What is enzyme induction and repression?

PART – B**(Answer any two questions: 02 X 10 = 20 Marks)**

- Write in detail about De Novo synthesis of fatty acids.
 - Discuss about electron transport chain and its mechanism.
- Discuss about the pathway and significance of gluconeogenesis.
 - Write about the citric acid cycle pathway.
- How genetic codes is used for amino acid coding and explain with wobbles hypothesis?
 - Write about semi conservative replication of DNA.

PART – C**(Answer any seven questions: 07 X 05 = 35 Marks)**

- Write about Redox potential.
 - Define and classify energy rich compounds.
- Explain about organization of mammalian genome.
 - Write about transcription.
- Write the synthesis and significance of dopamine.
 - Explain hyperbilirubinemia and jaundice.
- Write about catabolism of amino acids.
 - Describe the biosynthesis of pyrimidine nucleotides.

Contd. in page 2

- 9 (a) What are phospholipids? Write the classification and functions of any two phospholipids.
(b) Write the biological significance of cyclic AMP.
- 10 (a) Write about the IUB classification of enzymes.
(b) Outline about the enzyme inhibitors with examples.
- 11 (a) Write the bio-synthesis of De-novo pathway of purine and explain any one metabolic disorder of purine.
(b) Write about the biological significance of cholesterol.
- 12 (a) Describe the relationship between free energy, enthalpy and entropy.
(b) Describe about biological significance of ATP.
- 13 (a) Explain about therapeutic applications of isoenzymes.
(b) Explain enzyme kinetics with Michaelis plot.

B.Pharm I Year II Semester (R19) Supplementary Examinations March 2022

BIOCHEMISTRY

(For 2019 admitted batch only)

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Define amino acids. Write the classification of amino acids.
 - (b) Define free energy, endergonic and exergonic reactions.
 - (c) Write briefly about Glycogen Storage Diseases (GSD).
 - (d) With suitable examples write about the significance of oxidative phosphorylation inhibitors.
 - (e) What do you understand by hypercholesterolemia and atherosclerosis?
 - (f) Write the structure and biological significance of dopamine.
 - (g) What do you understand by gouty arthritis?
 - (h) Briefly write about the structure of DNA.
 - (i) Write any two diagnostic applications of enzymes.
 - (j) Write about the importance of enzyme induction.

PART – B**(Answer any two questions: 02 X 10 = 20 Marks)**

- 2 (a) Describe citric acid cycle and its significance in metabolism.
(b) Briefly write about the chemical nature and biological significance of proteins.
- 3 (a) Define carbohydrates. Write the classification of carbohydrates.
(b) Explain about the electron transport chain.
- 4 (a) Write in detail about the structure and functions of RNA.
(b) Write the nomenclature of enzymes.

PART – C**(Answer any seven questions: 07 X 05 = 35 Marks)**

- 5 (a) Define lipids. Write the classification of lipids.
(b) Define enthalpy and entropy.
- 6 (a) What is diabetes mellitus?
(b) With suitable examples, write about the significance of Electron Transport Chain (ETC) inhibitors.
- 7 (a) What do you understand by ketoacidosis?
(b) Write the structure and biological significance of noradrenaline.
- 8 (a) What do you understand by hyperuricemia?
(b) With suitable examples, write about the significance protein synthesis inhibitors.

Contd. in page 2

- 9 (a) Write any two therapeutic applications of enzymes.
(b) With suitable examples, write about the importance of enzyme inhibitors.
- 10 (a) Define proteins and write about protein synthesis inhibitors.
(b) Write the biochemical functions of isoenzymes.
- 11 (a) Explain about Jaundice.
(b) Explain decarboxylation and deamination reactions.
- 12 (a) Write a short note on albinism.
(b) Briefly write about catabolism of heme.
- 13 (a) Explain about organization of mammalian genome.
(b) Elaborate transcription and translation.

B.Pharm I Year II Semester (R19) Regular Examinations November/December 2021

BIOCHEMISTRY

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

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

- (a) Define enthalpy and entropy.
- (b) Write the functions of nucleic acids.
- (c) What is fatty liver?
- (d) What are exergonic reactions?
- (e) What is albinism?
- (f) Define phenylketonuria.
- (g) List the nucleic acids.
- (h) What is hyperuricemia?
- (i) What is Lineweaver Burk plot?
- (j) Write enzyme inhibitors with examples.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

- 2 (a) Write about semi conservative replication of DNA.
(b) Explain the genetic code used for amino acid coding and explain with wobbles hypothesis.
- 3 (a) Explain about co-enzymes.
(b) Write the mechanism of enzyme action.
- 4 (a) Write about oxidative phosphorylation.
(b) Discuss about electron transport chain and its mechanism.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

- 5 (a) What are the classification and biological role of nucleic acids?
(b) Write the biological significance of cyclic AMP.
- 6 Explain about the citric acid cycle pathway.
- 7 (a) Explain the conversion of cholesterol into steroid hormones and write its significance.
(b) Analyze the disorders of lipid metabolism.
- 8 (a) Write short notes about gout diseases.
(b) Discuss biosynthesis of purine nucleotides.
- 9 Write about the IUB classification of enzymes.
- 10 Write about De Novo Synthesis of fatty acids.
- 11 (a) Write the synthesis and significance of noradrenaline.
(b) Explain about alkaptonuria and tyrosinemia.
- 12 (a) Discuss about organization of mammalian genome.
(b) Write the structure of DNA and their functions.
- 13 (a) Write about the allosteric enzyme regulation.
(b) Explain about diagnostic applications of enzymes.

B.Pharm I Year II Semester (R19) Supplementary Examinations September/October 2021
BIOCHEMISTRY

Time: 3 hours

Max. Marks: 75

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Define carbohydrates. Write the classification of carbohydrates.
 - (b) Define enthalpy and entropy.
 - (c) What is diabetes mellitus?
 - (d) With suitable examples, write about the significance of Electron Transport Chain (ETC) inhibitors.
 - (e) What do you understand by ketoacidosis?
 - (f) Write the structure and biological significance of noradrenaline.
 - (g) What do you understand by hyperuricemia?
 - (h) With suitable examples, write about the significance protein synthesis inhibitors.
 - (i) Write any two therapeutic applications of enzymes.
 - (j) With suitable examples, write about the importance of enzyme inhibitors.

PART – B
(Answer any two questions: 02 X 10 = 20 Marks)

- 2 (a) Describe glycolysis pathway and its significance in metabolism.
(b) Briefly write about the chemical nature and biological significance of carbohydrates.
- 3 (a) Define lipids. Write the classification of lipids.
(b) Explain about the beta-oxidation of fatty acids.
- 4 (a) Write in detail about the structure and functions of DNA.
(b) Write the classification of enzymes.

PART – C
(Answer any seven questions: 07 X 05 = 35 Marks)

- 5 (a) Define and classify amino acids.
(b) Define the term's free energy, endergonic and exergonic reactions.
- 6 (a) Write briefly about oxidative phosphorylation inhibitors.
(b) Write about Glycogen Storage Diseases (GSD).
- 7 What do you understand by hypercholesterolemia and atherosclerosis?
- 8 (a) Discuss the structure of DNA.
(b) Briefly write about the gouty arthritis.
- 9 Write about the importance of Michaelis plot and Line Weaver Burke plot.
- 10 Write the biochemical functions of enzymes.
- 11 Explain transamination and deamination reactions.
- 12 (a) Write a note on phenylketonuria.
(b) Briefly write about urea cycle.
- 13 Explain about genetic code.

B.Pharm I Year II Semester (R19) Supplementary Examinations April 2021

BIOCHEMISTRY

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- Define the terms enthalpy and entropy.
 - Mention the biological significance associated with ATP and cyclic AMP.
 - Mention the significance of HMP shunt.
 - Define uncouplers. Give two examples.
 - What are ketone bodies? Give suitable examples.
 - Why are women less prone to heart related disorders compared to men?
 - Write briefly on Genetic code.
 - Enlist any four major differences between DNA and RNA.
 - Define the terms K_m and V_{max} .
 - What are isoenzymes? Give two examples.

PART – B**(Answer any two questions: 02 X 10 = 20 Marks)**

- 2 Explain the de novo synthesis of Palmitic acid.
- 3 With respect to enzymes, write in detail on the following:
(i) IUB classification of enzymes with suitable reaction as example under each class.
(ii) Allosteric regulation of enzymes.
- 4 Explain the reactions of aerobic glycolysis. Add a note on its energetic.

PART – C**(Answer any seven questions: 07 X 05 = 35 Marks)**

- 5 Write short notes on the structure and functions of tRNA.
- 6 With respect to nucleic acid metabolism, discuss on the initiation and elongation step in translation.
- 7 Write short notes on Atherosclerosis.
- 8 Give the enzyme defect, clinical manifestations, diagnosis and treatment associated with alkaptonuria.
- 9 Write briefly on therapeutic and diagnostic application of enzymes.
- 10 Define enzymes. Enlist their properties.
- 11 Write short notes on glycogen storage diseases.
- 12 With the help of neat labeled diagram, explain the rotary motor model of ATP generation.
- 13 Define the terms free energy and bioenergetics. Classify lipids and mention any four functions of them.

B.Pharm I Year II Semester (R19) Regular Examinations November 2020

BIOCHEMISTRY

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- Enlist any four major complex biomolecules of the cell and mention their main function.
 - Define high energy compounds. Classify them with examples.
 - Sketch phase-I of glycolysis.
 - Differentiate between oxidative phosphorylation and substrate level phosphorylation.
 - Define transamination and deamination reactions.
 - Draw the structure of cholesterol and mention its biological significance.
 - Enlist any four salient features of Watson and Crick model of DNA.
 - Write briefly on the treatment of gout.
 - Give the structure and biochemical function of any two coenzymes.
 - Draw the Line Weaver burke plot of enzyme kinetics.

PART – B**(Answer any two questions: 02 X 10 = 20 Marks)**

- 2 Sketch the reactions of Krebs cycle and energetics.
- 3 Explain the steps involved in β -oxidation of Palmitic acid. Add a note on its energetics.
- 4 With the help of suitable diagram, explain 'Translation process proper'. Add a note on translation inhibitors.

PART – C**(Answer any seven questions: 07 X 05 = 35 Marks)**

- 5 Define the terms exergonic and endergonic reactions with an example for each. Write briefly on redox potential.
- 6 Write briefly on inhibitors of Electron Transport Chain.
- 7 Explain the steps involved in urea cycle and add a note on the disorders associated with it.
- 8 Sketch the replication fork.
- 9 What are enzyme inhibitors? Explain briefly on competitive inhibition.
- 10 Give the IUB classification of enzymes, citing suitable reaction under each class.
- 11 Give the enzyme defect, clinical manifestations, diagnosis and treatment associated with phenylketonuria.
- 12 Explain briefly on different types of RNA.
- 13 Write short notes on the chemical classification and functions of amino acids.
