Code: BP203T

R19

B.Pharm I Year II Semester (R19) Supplementary Examinations February 2023

BIOCHEMISTRY

(For 2019, 2020 & 2021 admitted batches only)

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

*****

1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	Define and classify carbohydrates with examples.	2M
	(b)	Write the biological role of lipids.	2M
	(c)	Define HMP shunt. Mention its significance.	2M
	(d)	Define Diabetes mellitus. Add a note on types of Diabetes mellitus.	2M
	(e)	Write the biological significance of cholesterol.	2M
	(f)	Write the biological significance of Melatonin.	2M
	(g)	What is Gout disease? Mention its disorders.	2M
	(h)	What is Genetic code? Give example.	2M
	(i)	Write Diagnostic applications of Isoenzymes.	2M
	(j)	Define enzyme inhibitors with example.	2M

PART – B

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

2	What is Glycolysis? Explain in detail the pathway, energetics and significance of glycolysis.	10M
3	Discuss in detail the β-oxidation of saturated fatty acids (Palmitic acid).	10M
4	Explain in detail the structure of DNA and mention its functions.	10M

PART – C

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

5	Explain in detail the relationship between free energy, enthalpy and entropy.	10M
6	Write in detail citric acid cycle pathway.	10M
7	Discuss in detail oxidative phosphorylation and its mechanism.	10M
8	Discuss in detail the formation and utilization of ketone bodies.	10M
9	Write the conversion of cholesterol into bile acids and Vitamin D.	10M
10	Explain the biosynthesis of purine nucleotides.	10M
11	Write in brief DNA replication.	10M
12	Write the nomenclature and IUB classification of enzymes.	10M
13	Explain the biochemical functions of co-enzymes.	10M

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Code: 15R00203

R15

B.Pharm I Year II Semester (R15) Supplementary Examinations February 2023

PHARMACEUTICAL BIOCHEMISTRY

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

*****

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

(a) Write the structure and significance of ATP.
(b) Define active and passive transport.
(c) Define minerals and write their biological role.
(d) What are isoenzymes? Write their applications.
(e) Differentiate between aerobic and anaerobic Glycolysis.
(f) Write the biological importance of Gluconeogenesis.
(g) What are essential and non-essential amino acids?
(h) Write a note on Maple syrup urine disease.
(i) Write a note on OGTT.
(j) Write a note on biochemical parameters for urine analysis.

PART – B

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

2 Write a note on following:

(a) Redox reactions.
(b) Determination of free energy change from equilibrium constant.

OR

3 With neat labeled diagram, explain the biochemical organization of the cell membrane.

4 (a) What are enzymes and co-enzymes? Explain mechanisms of enzyme action.
(b) Write the clinical and non-clinical applications of enzymes.

OR

5 (a) Discuss the mechanism of action of enzymes.
(b) Define and classify lipids and nucleic acids.

6 Discuss in detail about Kreb's cycle.

OR

7 (a) Define gluconeogenesis and explain the reactions involved in it.
(b) Explain the reactions sequence in TCA cycle.

8 (a) Write a note on urea cycle.
(b) Explain Serotonin pathway.

OR

9 (a) Explain the biosynthesis of palmitic acid.
(b) Write a note on fatty acid synthase enzyme complex.

10 Explain in detail about liver function tests.

OR

11 (a) List out different kidney function tests Explain any two of them.
(b) Define OGTT. Explain the principle involved in OGTT.

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Code: BP203T

R19

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.

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de: BP203T

R19

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

e: 3 hours

Max. Marks: 75

PART – A
(Compulsory Question)
*****

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)

a) Describe glycolysis pathway and its significance in metabolism.
b) Briefly write about the chemical nature and biological significance of carbohydrates.

a) Define lipids. Write the classification of lipids.
b) Explain about the beta-oxidation of fatty acids.

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)

(a) Define and classify amino acids.
(b) Define the term's free energy, endergonic and exergonic reactions.

(a) Write briefly about oxidative phosphorylation inhibitors.
(b) Write about Glycogen Storage Diseases (GSD).

What do you understand by hypercholesterolemia and atherosclerosis?

(a) Discuss the structure of DNA.
(b) Briefly write about the gouty arthritis.

Write about the importance of Michaelis plot and Line Weaver Burke plot.

Write the biochemical functions of enzymes.

Explain transamination and deamination reactions.

(a) Write a note on phenylketonuria.
(b) Briefly write about urea cycle.

Explain about genetic code.

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Code: BP203T

R19

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 hyperchoresterolemia 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.

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Code: 15R00203

R15

B.Pharm I Year II Semester (R15) Supplementary Examinations March 2022

PHARMACEUTICAL BIOCHEMISTRY

Time: 3 hours | Max. Marks: 70

PART – A

(Compulsory Question)

*****

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

(a) Write a short note on sodium & potassium pump.
(b) What is osmoregulation and redox potential?
(c) Define minerals and write their biological role.
(d) What are isoenzymes? Write their applications.
(e) Give a brief note on Cori cycle.
(f) Discuss in brief about pentose phosphate pathway.
(g) Write a short note on disorders related to lipid metabolism.
(h) What is deamination and give example?
(i) What is OGTT? mention WHO Criteria for OGTT?
(j) What are proteinemia & proteinuria conditions?

PART – B

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

2 Define ETC. Explain how it is important in energy capture & control.

OR

3 Write a note on following.

(a) Redox reactions.
(b) Determination of free energy change from equilibrium constant.

4 (a) Write the biological functions of carbohydrates, proteins & lipids.
(b) Give a note on enzyme repression.

OR

5 (a) Explain the structure and properties of enzymes.
(b) Write the clinical importance of enzymes in treatment & diagnosis.

6 Explain the metabolic pathway, regulation & significance of uronic acid pathway.

OR

7 Explain in detailed about gluconeogenesis.

8 (a) Discuss in detail about urea cycle.
(b) Write the metabolism of tryptophan.

OR

9 Explain the biosynthesis of purines and pyrimidines.

10 Write the role of proteins and hormones in clinical biochemistry.

OR

11 Discuss the kidney function tests.

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Code: 15R00203

R15

B.Pharm I Year II Semester (R15) Supplementary Examinations December 2019

PHARMACEUTICAL BIOCHEMISTRY

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

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

(a) What are the building blocks of protein?
(b) Clinical importance of insulin and dextran.
(c) Write about starch and glycogen storage diseases.
(d) What are the classifications of fatty acids?
(e) Define Km.
(f) Define translation and transcription.
(g) Write a short note on genetic code.
(h) Write about oxidative phosphorylation.
(i) Define atherosclerosis.
(j) Give importance of Cori cycle.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain about production of ATP and its biological significance in biological cycle.

OR

3 Write about significance of oxidative phosphorylation and energetics in biochemical reaction. Explain electron transport chain mechanism.

UNIT – II

4 What are enzymes and co-enzymes and classify them? Add a note on enzyme inhibitors with mechanism.

OR

5 Explain about clinical importance of enzymes in treatment and diagnosis of various diseases.

UNIT – III

6 Explain glycolysis with reactions and its biological significance in the body.

OR

7 Write the pathway gluconeogenesis and give its importance.

UNIT – IV

8 The fatty acids in the body mostly by β –oxidation. Explain with biochemical reaction.

OR

9 Explain Kreb's – Henseleit cycle.

UNIT – V

10 Explain various liver function test.

OR

11 Explain in detail about OGTT.

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Code: 15R00203

R15

B.Pharm I Year II Semester (R15) Regular & Supplementary Examinations July 2019

PHARMACEUTICAL BIOCHEMISTRY

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

*****

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

(a) Write structure and functions of the plasma membrane.
(b) List the structure and functions of the three biochemically important disaccharides.
(c) Define lipids and classify.
(d) What is Allosteric inhibition?
(e) List different types of RNA.
(f) Write nucleosides and nucleotides.
(g) Define NAD.
(h) Write about Fatty liver.
(i) Write essential amino acids.
(j) Discuss substrate level phosphorylation.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain about active and passive transport mechanisms with examples. Write transport process involving in sodium and potassium pumps.

OR

3 Write biochemical significance of production of ATP. Add a note on redox reactions.

UNIT – II

4 Write a detailed note on various factors affecting enzymes actions and enzymes kinetics.

OR

5 Explain in detail the structure of DNA.

UNIT – III

6 Citric acid essentially involves the oxidation of acetyl CoA to CO_2 and H_2O. Explain with reaction and write its significance.

OR

7 Explain glycogen synthesis from glucose. Write glycogen storage diseases.

UNIT – IV

8 Add a detailed note on ketone bodies including ketogenesis, utilization, over-production and regulation of ketone bodies.

OR

9 Classify proteins. Explain metabolic reactions of amino acids.

UNIT – V

10 Explain about renal function tests.

OR

11 Describe laboratory based tests used to determine serum glucose concentration.

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Code: 15R00203

R15

B.Pharm I Year II Semester (R15) Supplementary Examinations September 2022

PHARMACEUTICAL BIOCHEMISTRY

Time: 3 hours | Max. Marks: 70

PART – A

(Compulsory Question)

*****

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

(a) Write the structure and significance of ATP.
(b) Define active and passive transport.
(c) Write a short note on induced fit theory.
(d) What is Line-Weaver Burk plot? Give its significance.
(e) Write short note on splitting phase of glycolysis.
(f) Write a short on Amphibolic role of TCA cycle.
(g) What is the role carnitine in fatty acid oxidation?
(h) Name four metabolic disorders of urea cycle with enzyme defect.
(i) What is the normal blood glucose level? Name the conditions in which blood glucose level is elevated.
(j) What are urinary tract calculi?

PART – B

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

2 (a) With neat labeled diagram, explain the biochemical organization of the cell membrane.
(b) Explain in detail the production of ATP and mention its significance.

OR

3 (a) Define active transport. Explain the mechanism involved in it.
(b) Define respiratory chain. Explain in brief the components involved in it.

4 (a) Explain in detail the semiconservative replication of DNA.
(b) Define carbohydrates. Explain in detail the classification of carbohydrates with examples.

OR

5 (a) What are isoenzymes? Describe their diagnostic applications.
(b) Explain competitive and non-competitive enzyme inhibition in detail.

6 (a) Define gluconeogenesis and explain the reactions involved in it.
(b) Explain the reactions sequence in TCA cycle.

OR

7 (a) Explain preparative phase of glycolysis.
(b) Explain the oxidative phase of HMP shunt.

8 (a) Explain the beta oxidation of fatty acids considering palmitic acid as example.
(b) Explain the transamination reactions involved in the catabolism of amino acids.

OR

9 (a) Explain in brief the biosynthesis of fatty acids.
(b) What are ketone bodies? Explain the formation and importance of ketone bodies.

10 (a) List out different kidney function tests Explain any two of them.
(b) Define OGTT. Explain the principle involved in OGTT.

OR

11 (a) Write a note on urinary tract calculi.
(b) Explain the tests for hepatic dysfunction.
(c) What is normal serum bilirubin level? Give its significance.

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