

(LN 2018)

SEPTEMBER 2018

Sub. Code: 2018

**B.PHARM. DEGREE EXAMINATION
PCI REGULATION – SEMESTER II
FIRST YEAR
PAPER III – BIOCHEMISTRY**

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Describe the beta oxidation of fatty acids with energetics.
2. Explain Hexose monophosphate shunt pathway and add a note on its metabolic significance.
3. Discuss about semiconservative replication of DNA.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain the mechanism of enzyme action.
2. Summarise ketogenesis.
3. Define and classify carbohydrate.
4. Describe urea cycle and its metabolic disorders.
5. Briefly explain Transcription.
6. Discuss the diagnostic applications of isoenzymes.
7. Describe Adenosine triphosphate as an energy rich compound.
8. Explain any two disorders of lipid metabolism.
9. Explain coenzymes.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define gluconeogenesis.
2. Define hyperbilirubinemia.
3. What is Michaelis-Menten equation?
4. Name the bile salts.
5. Define transamination.
6. What is mutarotation?
7. Write any two functions of nucleic acids.
8. What is isoenzyme?
9. What is Albinism?
10. Name the bases present in DNA.

(LO 2018)

MARCH 2019

Sub. Code: 2018

B.PHARM. DEGREE EXAMINATION
PCI Regulation – SEMESTER II
PAPER III – BIOCHEMISTRY

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Describe protein synthesis and its inhibitors.
2. Explain De novo synthesis of fatty acids.
3. Discuss about gluconeogenesis.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Enumerate the IUB classification of enzymes.
2. Summarise glycogenolysis.
3. Outline the biosynthesis of pyrimidine nucleotides.
4. Describe catabolism of aminoacids.
5. Briefly explain organization of mammalian genome.
6. Explain Jaundice and its types.
7. Describe the relationship between free energy, enthalpy and entropy.
8. Explain Alkaptonuria and Phenylketonuria.
9. Define and classify lipids.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Define enthalpy and entropy.
2. Write the energetic for glycolysis pathway.
3. Enlist uncouplers in oxidative phosphorylation.
4. What is fatty liver?
5. Write the conversion of phenylalanine to tyrosine.
6. What is hyperuricemia?
7. What is transcription?
8. What is enzyme induction and repression?
9. What is ketoacidosis?
10. Name essential aminoacids.

(LP 2018)

SEPTEMBER 2019

Sub. Code: 2018

B.PHARM. DEGREE EXAMINATION
PCI Regulation – SEMESTER II
PAPER III – BIOCHEMISTRY

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Describe transamination and deamination reactions with suitable examples.
2. Explain Embden Meyerhof pathway and write its significance.
3. How genetic code is used for amino acid coding and explain with wobble hypothesis?

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Discuss and detail about the Redox potential.
2. What are phospholipids? Describe the classification and functions of any two Phospholipids.
3. Synthesis and significance of Melatonin.
4. Explain Hyperbilirubinemia and Jaundice.
5. Bio-synthesis of De-novo pathway of purine and explain any one metabolic disorder of purine.
6. Explain Enzyme kinetics with Michaelis plot.
7. Explain allosteric enzymes regulation.
8. Hexose Monophosphate pathway.
9. Explain the conversion of cholesterol into steroid hormones and write its significance.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. What is Atherosclerosis?
2. Define Bio molecules.
3. Diabetes Mellitus.
4. What are exergonic reaction?
5. What is cellular respiration?
6. What is albinism?
7. Differentiation mRNA & tRNA.
8. Define coenzymes.
9. Creatinine.
10. Lipoprotein.

(LQ 2018)

MARCH 2020

Sub. Code: 2018

B.PHARM. DEGREE EXAMINATION
PCI Regulation – SEMESTER II
PAPER III – BIOCHEMISTRY

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Explain the De novo synthesis of Palmitic acid.
2. Define Oxidative Phosphorylation. What is the cellular site of Oxidative phosphorylation?
3. Explain the steps involved in Biosynthesis of Nucleotide.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Write a note on the Pathway of synthesis Catecholamines.
2. Describe Urea Cycle.
3. Explain Inhibitors of Protein synthesis.
4. Write short note on NAD^+ and NADP^+ .
5. Heme.
6. Write the conversion of cholesterol to Vitamin D3.
7. Explain Bioenergetics and concept of free energy.
8. Explain in detail about the clinical significance of Isoenzymes.
9. What are Glycolipids? Explain with suitable examples.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Explain Endergonic reactions.
2. Write the significance of ATP.
3. Hypercholesterolemia.
4. Ketone bodies.
5. Alkaptonuria.
6. Gout.
7. What are essential fatty acids?
8. Define codons.
9. Define lysosomes.
10. Write the therapeutic applications of enzymes.

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[BPHARM 0321]

MARCH 2021

Sub. Code: 2018

(SEPTEMBER 2020 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER – II

PAPER III – BIOCHEMISTRY

Q.P. Code : 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Explain the process of glycogen breakdown pathway.
2. Describe the citric acid cycle with energetic.
3. Explain the metabolic pathway of phenylalanine and Tyrosine.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. RNA
2. Explain the coenzymes involving oxidation – reduction reaction.
3. Lipoproteins.
4. Describe the Michaelis – Menten equation.
5. Explain about glycogen storage diseases.
6. Fatty liver.
7. Biosynthesis of Purine nucleotides.
8. Electron transport chain.
9. Jaundice.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Albinism.
2. Hypercholesterolemia.
3. Define metabolism.
4. What is the significance of HMP shunt?
5. What is genome?
6. Atherosclerosis.
7. Give any two differences between DNA and RNA.
8. Isoenzymes.
9. Ketone bodies.
10. FMN.

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[BPHARM 0122]

**JANUARY 2022
(MARCH 2021 EXAM SESSION)**

Sub. Code: 2018

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER II

PAPER III – BIOCHEMISTRY

Q.P. Code : 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Describe the Hexose Monophosphate shunt pathway and add a note on metabolic significance.
2. Briefly discuss the composition of DNA with a suitable diagram.
3. Discuss the reactions of gluconeogenesis.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Translation
2. Write down the reaction of β -oxidation.
3. Structure of t-RNA.
4. Classify the proteins with suitable examples.
5. Adenosine Triphosphate (ATP)
6. Clinical applications of enzymes.
7. Explain glycogenolysis.
8. Diabetes mellitus.
9. Classification and nomenclature of enzymes.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Name sulphur containing amino acids.
2. Deamination.
3. Fatty liver.
4. cAMP.
5. Oxidative phosphorylation.
6. Alkaptonuria.
7. Gout.
8. Ketosis.
9. What is Nucleotide? Give example.
10. Role of Carnitine.

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[BPHARM 0522]

MAY 2022

Sub. Code: 2018

(SEPTEMBER 2021 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER - II

PAPER III – BIOCHEMISTRY

Q.P. Code : 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Describe the beta oxidation of fatty acids. Write the energetic for palmitic acid oxidation.
2. Describe in detail about Glycolysis with energetics.
3. Define enzyme and discuss the various types of enzyme inhibition with suitable examples.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Transcription.
2. Classification of amino acids.
3. Functions of Cyclic AMP.
4. Urea cycle.
5. Ketogenesis.
6. Genetic code.
7. Functions of Nor Adrenaline and Adrenaline.
8. Oxidative Phosphorylation.
9. Biosynthesis of Pyrimidine nucleotide.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Define coenzymes and give examples.
2. Define gluconeogenesis and glycogenesis.
3. Obesity.
4. Define hyperbilirubinemia.
5. Essential Amino Acids.
6. Phenylketonuria.
7. Functions of cholesterol.
8. Hyperuricemia.
9. What is Nucleoside? Give example.
10. Transamination.

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[BPHARM 1022]

**OCTOBER 2022
(MARCH 2022 EXAM SESSION)**

Sub. Code: 2018

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER II

PAPER III – BIOCHEMISTRY

Q.P. Code : 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Describe urea cycle and its metabolic disorder.
2. Explain the steps involved in biosynthesis of pyrimidine nucleotide.
3. Explain synthesis of Fatty acid.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Phospholipids.
2. Discuss and detail about the Redox potential.
3. Ketone bodies.
4. Jaundice and its types.
5. Explain enzyme inhibitors with example.
6. Classify Carbohydrates.
7. Synthesis and significance of Melatonin.
8. Write note on Phenyl Ketonuria.
9. Replication of DNA.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Difference between DNA and RNA.
2. Fatty liver.
3. Coenzyme.
4. Albinism.
5. Transamination.
6. Define carbohydrates with examples.
7. Glycolysis.
8. Genetic code.
9. Hypercholesterolemia.
10. Essential fatty acids with examples.

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[B.PHARM 0323]

**MARCH 2023
(SEPTEMBER 2022 EXAM SESSION)**

Sub. Code: 2018

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER II
PAPER III – BIOCHEMISTRY**

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Describe formation of Ketone bodies.
2. Explain citric acid cycle pathway and add note on its metabolic significance.
3. Describe protein synthesis and its inhibitors.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Define lipids. Classify lipids with examples.
2. Biosynthesis of Purine nucleotide.
3. Glycogenolysis.
4. Explain the coenzymes with examples.
5. Synthesis and significance of Melatonin.
6. Jaundice and its types.
7. Define amino acid. Classification of amino acid with examples.
8. Discuss and detail about the Redox potential.
9. Genetic code.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Essential fatty acids with examples.
2. Atherosclerosis.
3. Define protein.
4. Define enthalpy and entropy.
5. Isoenzymes.
6. Fatty Liver.
7. Gout.
8. Oxidative phosphorylation.
9. What is albinism?
10. Deamination.

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[B.PHARM 0823]

**AUGUST 2023
(MARCH 2023 EXAM SESSION)**

Sub. Code: 2018

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER II
PAPER III – BIOCHEMISTRY**

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Define and classify nucleic acid. Explain the biosynthesis of pyrimidine nucleotides.
2. Explain the conversion of cholesterol into bile acids
3. What are Coenzymes, structure and Biochemical function of coenzyme.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Glyconeogenesis pathway and its significance.
2. Oxidative phosphorylation and its mechanism.
3. Reactions of amino acid metabolism.
4. DNA replication.
5. Biosynthesis of purine nucleotides.
6. Applications of enzymes.
7. Catabolism of tyrosine and phenylalanine and their metabolic disorders.
8. Enzyme inhibitors with examples.
9. Properties of enzymes.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Glycolysis.
2. ETC.
3. Significance of ATP & cyclic AMP.
4. Identification test for protein.
5. Hypercholesterolemia.
6. Hyperbilirubinemia.
7. Gout disease.
8. Endergonic and Exergonic reactions.
9. Transamination.
10. Redox potential.

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[B.PHARM 1223]

**DECEMBER 2023
(SEPTEMBER 2023 EXAM SESSION)**

Sub. Code: 2018

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER II
PAPER III – BIOCHEMISTRY**

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Define carbohydrate. Explain Citric acid cycle- Pathway, energetic and significance.
2. Formation and utilization of ketone bodies.
3. What are enzymes? Classify. Explain Nomenclature of Enzyme.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Glycogen storage diseases.
2. De novo synthesis of fatty acids (Palmitic acid).
3. Synthesis and significance of Melatonin and Dopamine.
4. Structure of DNA and RNA and their functions.
5. Coenzymes –Structure and biochemical functions.
6. Electron transport chain.
7. Classification of Lipids.
8. Catabolism of Heme.
9. Disorders of Lipid metabolism.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Enthalpy and Entropy.
2. Concept of free energy.
3. Albinism.
4. Fatty Liver.
5. Alkaptonuria.
6. Tyrosinemia.
7. Genetic code.
8. Decarboxylation of amino acid.
9. 5HT.
10. Arteriosclerosis.

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[B.PHARM 0524]

MAY 2024

Sub. Code: 2018

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER II

PAPER III – BIOCHEMISTRY

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. What is Glycolysis? Explain the metabolic pathway and its energetics.
2. β -oxidation of saturated fatty acid.
3. What are enzymes? Classify them and discuss its mechanism of action and explain the clinical importance.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Structure of DNA.
2. Phospholipids.
3. Ketone bodies.
4. Briefly discuss the composition of DNA with a suitable diagram.
5. Transport process across cell membrane.
6. Metabolism of Aminoacids.
7. Classification of proteins.
8. Hexose Monophosphate Pathway (HMP).
9. Hyper Uricemia and GOUT.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Confirmatory tests for Carbohydrate.
2. Hypernatremia.
3. Hyperthyroidism.
4. Atherosclerosis.
5. Non-reducing sugar.
6. Define Bio molecules.
7. Diabetes Mellitus.
8. Define coenzymes.
9. Creatinine.
10. Lipoprotein.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[B.PHARM 1024]

**OCTOBER 2024
(SEPTEMBER 2024 EXAM SESSION)**

Sub. Code: 2018

**B. PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER II
PAPER III – BIOCHEMISTRY**

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. What is Glycogen? Explain the process of glycogen breakdown and glycogen storage diseases.
2. Explain the urea cycle and give the deficiency symptoms of urea cycle enzymes.
3. Describe in detail about the biosynthesis of cholesterol and its significance in the biological system.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write the Catabolism of Purine Nucleotides.
2. Explain competitive inhibition with examples.
3. Describe the hormonal regulation of blood glucose level in the body.
4. Define lipids and classify them with examples.
5. Organization of mammalian genome.
6. Explain the synthesis and significance of adrenaline and Nor-adrenaline.
7. Expand LDH and ACTH and write their significance.
8. Uncouplers.
9. Oxidative phosphorylation.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define K_m and write its significance.
2. Mention the bases of DNA and RNA.
3. Write the inhibitors of ETC.
4. What is tyrosinemia?
5. Write the significance of Line-Weaver Burk plot.
6. What is heparin and its functions?
7. Write any two colour reactions of proteins.
8. Define Nucleosides and Nucleotides.
9. tRNA.
10. Free energy.

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[B.PHARM 0325]

MARCH 2025

Sub. Code: 2018

B. PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER II

PAPER III – BIOCHEMISTRY

Q.P. Code: 562018

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Explain Citric acid cycle-Pathway, energetic and significance.
2. What are enzymes? Classify them and explain the Nomenclature of Enzymes.
3. Explain the steps involved in Biosynthesis of Nucleotide.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Describe Adenosine triphosphate as an energy rich compound.
2. Describe Urea Cycle.
3. Replication of DNA.
4. Relationship between free energy, enthalpy and entropy.
5. RNA.
6. Electron transport chain.
7. Jaundice.
8. Fatty liver.
9. Oxidative Phosphorylation.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Redox Potential.
2. Hypercholesterolemia.
3. Atherosclerosis.
4. Explain about glycogen storage diseases.
5. Explain glycogenolysis.
6. Diabetes mellitus.
7. Functions of Nor Adrenaline.
8. Phenyl Ketonuria.
9. Michaelis – menten equation.
10. Isoenzymes.
