

[KD 706]

Sub. Code : 4181

SECOND B.Pharmacy DEGREE EXAMINATION.

(Revised Regulations)

Paper I -- BIOCHEMISTRY

Time : Three hours Maximum : 90 marks
Two and a half hours Sec. A & Sec. B : 60 marks
for Sec. A & Sec. B Section C : 30 marks

Answer Sections A and B in the same Answer Book.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Classify enzymes with examples as per IUB recommendation. (5)
(b) Explain enzyme induction and enzyme inhibition with examples. (10)
2. (a) What is substrate level phosphorylation? Illustrate with two examples. (5)
(b) Discuss oxidative phosphorylation in the mitochondria. Give the significance of the respiratory chain. (10)
3. (a) Give the structure of double helical DNA explaining its features. (5)
(b) How are the DNA and RNAs involved in protein biosynthesis. (10)

4. (a) Define Basal Metabolism. What are the factors that influence BMR? (5)

- (b) Write in detail about the Kidney function tests. (10)

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on SIX of the following :

- (a) Pellagra.
- (b) Rickets.
- (c) Functions of pyridoxal phosphate.
- (d) Formation of ketone bodies and their utilisation.
- (e) Urea clearance test and its significance.
- (f) Prostaglandins.
- (g) Detoxification of drugs.
- (h) Intestinal disaccharidases and their functions.
- (i) Gluconeogenesis.

NOVEMBER - 2001

[KE 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours Maximum : 90 marks
Two and a half hours Sec. A & Sec. B : 60 marks
for Sec. A and Sec. B Section C : 30 marks

Answer Sections A and B in same Answer Book.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Classify lipids giving examples. (5)
(b) Describe the beta oxidation of Palmitic acid and calculate the energy yield in terms of ATP. (7 + 3 = 10)
2. (a) Describe Wald's visual cycle. (5)
(b) Give the sources in the daily diet, requirements, functions and deficiency state of vitamin C. (1 + 2 + 4 + 3 = 10)

3. (a) What is the chemical nature of Insulin? Where is it formed? How does it respond in the fed and fasting states? (2 + 3 = 5)

- (b) Give the reactions of the Kreb's Cycle. List the co-enzymes involved in this cycle. (7 + 3 = 10)

4. (a) What is dietary essential amino acid? Name them. (1 + 4 = 5)

- (b) Describe the synthesis of Niacin and Serotonin from Tryptophan. (7 + 3 = 10)

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on SIX of the following :
 - (a) NPN substances excreted in urine
 - (b) Fuel value of foods
 - (c) Normal biochemical composition of CSF and their variations in disease
 - (d) Absorption of calcium
 - (e) Active methionine, its synthesis and functions
 - (f) Prostaglandins
 - (g) Mode of action of drugs
 - (h) Dietary sources and functions of iodine
 - (i) Extra cellular buffers of blood.

[KE 706]

[KG 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

BIOCHEMISTRY

Time : Three hours Maximum : 90 marks

Two and a half hours Sec. A & Sec. B : 60 marks

for Sec. A & Sec. B. Section C : 30 marks

Answer Sec. A and Sec. B in the same answer book.

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

1. (a) What are amino acids? Classify them with examples. ($1 + 2 + 2 = 5$)

(b) Describe the complete oxidation of one amino acid. (10)

2. (a) What are enzymes? Describe the IUB system of nomenclature and classification with examples. ($1 + 4 = 5$)

(b) Enumerate the factors affecting enzyme activity. Derive an equation to show that initial velocity of an enzyme catalysed reaction is proportional to substrate concentration. (2 + 8)

3. (a) List out the purines and pyrimidines involved in DNA synthesis. Give their structures. (5)

(b) Describe the process of RNA synthesis. (10)

4. Describe the secondary pathway for the oxidation of glucose with reactions. Add a note on its functions and clinical significance. ($10 + 2\frac{1}{2} + 2\frac{1}{2} = 15$)

SECTION B — ($6 \times 5 = 30$ marks)

5. Write briefly on any SIX of the following :

(a) Gluconeogenesis

(b) Ketogenesis

(c) Fatty liver

(d) DNA replication

(e) Cholesterol breakdown

(f) Cytochromes

(g) Liver function tests

(h) Pyrimidine biosynthesis

(i) Hormones involved in carbohydrate metabolism.

SEPTEMBER - 2002

[KH 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B

Section C : 30 marks

Answer Sections A and B in the **SAME** Answer Book.

Answer Section C in the Answer Sheet provided.

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

1. (a) Describe the process of glycogenesis and glycogenolysis. How they are regulated? (6 + 4 = 10)

(b) Write a short note on polysaccharides. (5)

2. (a) Write the components of electron transport chain indicating sites of phosphorylation. (5)

(b) Describe extramitochondrial synthesis of palmitic acid. (10)

SEPTEMBER - 2002

3. (a) Describe in detail the metabolism of tyrosine in the human body. (12)

(b) Give the biochemical explanation for the following.

Vitamin E and selenium protect cell membranes. (3)

4. (a) Describe chemistry, dietary sources, daily requirements, functions and deficiency manifestations of vitamin A. (10)

(b) Write briefly on glucose absorption in the GI Tract. (5)

SECTION B — (6 × 5 = 30 marks)

5. Write short answers on any SIX of the following :

(a) Energy requirement of a college going student.

(b) Calcium homeostasis.

(c) Liver function tests.

(d) Structure of DNA.

(e) Competitive inhibition of enzymes.

(f) Secondary structure of proteins.

(g) Lipoproteins.

(h) Dietary fibers.

(i) Gout.

[KI 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

Two and a half hours
for Sec. A and Sec. B

Sec. A & Sec. B : 60 marks
Section C : 30 marks

Answer Sections A and B in the **SAME** Answer book.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Write the enzyme classification and explain the factors affecting enzyme activity. (3 + 7 = 10)
(b) Discuss the enzyme inhibition. (5)
2. (a) Explain the chemical reactions involved in the citric acid cycle and write its significance. (6 + 2 = 8)
(b) Describe the pentose phosphate pathway and write its importance. (5 + 2)

3. Describe the chemistry, dietary sources, functions and deficiency manifestations of (7 + 8)

- (a) Vitamin C and
- (b) Vitamin D.

4. (a) Describe the β -(beta) oxidation of fatty acids. (5)

- (b) What is ketogenesis? Explain the production and utilization of ketone bodies in the body. (1 + 9 = 10)

SECTION B — (6 × 5 = 30 marks)

5. Write short answers on any SIX of the following :

- (a) Polysaccharides.
- (b) Diagnostic applications of enzymes.
- (c) Functions and deficiency manifestations of vitamin A.
- (d) Structure of DNA.
- (e) Phospholipids.
- (f) Coenzymes.
- (g) Essential fatty acids.
- (h) Biological importance of iron.
- (i) Liver function tests.

OCTOBER - 2003

[KJ 706]

Sub. Code : 4181

SECTION B — (8 × 5 = 40 marks)

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

Two hours and Forty minutes Sec. A & Sec. B : 70 marks
for Sec. A and Sec. B

Twenty minutes for Sec. C

Section C : 20 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the Answer Sheet Provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO.

1. Classify proteins with suitable examples. Discuss the structure of proteins. (6 + 9 = 15)
2. What are nucleoside, nucleotide and nucleic acid? Discuss the structures and properties of DNA and t-RNA. (3 + 6 + 6 = 15)
3. Write briefly on the glucose absorption :
 - (a) From the G.I. Tract. (5)
 - (b) Describe the process of glycogenesis and glycogenolysis. How are they regulated? (6 + 4 = 10)

Answer any EIGHT.

4. Give an account of the structures of disaccharides and polysaccharides.
 5. Discuss the different types of haemoglobin and their biological role.
 6. Explain the mechanism of action of enzymes.
 7. Outline the sources, requirement, function and deficiency manifestation of vitamin A.
 8. Write a note on the mode of action of insulin.
 9. Discuss the structure of phospholipid.
 10. Outline the steps of gluconeogenesis.
 11. Explain any two functional tests of liver.
 12. Dietary fibres.
 13. Ketone bodies
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[KK 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

Sec. A & B : Two hours and
forty minutes

Sec. A & B : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer Sections A and B in the SAME Answer Book.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Explain B-oxidation of free fatty acids. Write energetics for palmitic acid. (i.e. How many molecules of ATP are evolved for oxidation of one molecule of palmitic acid).
2. (a) Write the scheme for analysis of carbohydrate. (8)
(b) Structure of Haemoglobin. (7)
3. Explain, in detail, biosynthesis of proteins.

SECTION B — (8 × 5 = 40 marks)

Answer any EIGHT questions.

Answer briefly :

4. Classification and properties of fatty acids.
5. Classification and properties of amino acids.
6. Source, structure, requirement, biochemical functions and deficiency manifestations of Vit. C.
7. Classification of enzymes (Illustrate with an example of code no.)
8. Define nucleoside, nucleotide and nucleic acid. Which sugar(s) is present in DNA and RNA?
9. Glycogenolysis.
10. Biochemical mode of action of thyroxine.
11. Metabolism of calcium and phosphorous.
12. Biochemistry of urine.
13. Enzyme induction and enzyme inhibition.

AUGUST - 2004

[KL 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

Sec. A & B : Two hours and
forty minutes

Sec. A & B : 70 marks

Sec. C : Twenty minutes

Sec. C : 20 marks

Answer Sections A and B in the **SAME** Answer book.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO.

1. (a) With the help of Michaelis – Menten curve, explain competitive and non-competitive enzyme inhibitions.

(b) Give the I.U.B. scheme of classification and nomenclature of enzymes. (12 + 3 = 15)

2. (a) Explain with schematic representation the overall steps involved in the citric acid cycle.

(b) Write the β -oxidation steps of saturated fatty acids occurring in mitochondria. (10 + 5 = 15)

AUGUST - 2004

3. (a) Classify vitamins with their chemical name.
(b) Write the source, chemistry, biochemical role, daily requirement and deficiency conditions of Vitamin D. (3 + 12 = 15)
4. Explain, in detail, biosynthesis of proteins. (15)

SECTION B — (8 × 5 = 40 marks)

Answer any EIGHT.

5. Describe the biochemical role of calcium and iron.
6. Explain the different levels of organisation of protein structure.
7. Write a short note on histones.
8. Explain the biochemical action of steroids synthesized in adrenal cortex.
9. Give the chemical structure and properties of cholesterol.
10. Describe the physiological functions of insulin.
11. Describe the acid-base behaviour of aminoacids.

12. Explain homopolysaccharides in brief.
13. Give the explanation for Iodine number, Saponification number, Acid number, with their uses.
14. Describe any two kidney function tests.

[KM 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours	Maximum : 90 marks
Sec. A & B : Two hours and forty minutes	Sec. A & B : 70 marks
M.C.Q. : Twenty minutes	M.C.Q. : 20 marks

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

- (a) What do you know about the chemical nature of proteins? How are they classified? Give examples. (5)

(b) Give an account of biosynthesis of proteins. (10)
- (a) Name the water soluble vitamins. (5)

(b) Describe the chemistry, source, biochemical role, daily requirement and deficiency manifestations of the vitamin thiamine. ($1 + 1 + 4 + 1 + 3 = 10$)

3. (a) Describe briefly the actions of enzymes involved in the digestion of carbohydrates. (5)

(b) Name the main storage form of carbohydrate in the body. Mention the sites of storage. Describe how blood glucose is produced from the storage form. Give functions of glycolysis. ($1 + 2 + 4 + 3 = 10$)

4. (a) What is cholesterol and what is its plasma concentration? Mention the useful compounds synthesized using cholesterol in the body. Discuss the harm if cholesterol level goes high. ($2 + 3 + 3 = 8$)

(b) Name the important poly unsaturated fatty acids. What are their functions? ($3 + 4 = 7$)

SECTION B — ($8 \times 5 = 40$ marks)

Write briefly on any EIGHT of the following.

- Ketone bodies.
- Hormones influencing blood glucose level.
- Enzyme induction.
- Balanced diet.
- DNA.
- Galactose metabolism.
- Abnormal constituents of urine.
- Km value of an enzyme.
- Phenylketonuria
- Gout.

[KM 706]

AUGUST - 2005

[KN 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 15 = 30)

Answer any TWO full questions.

1. (a) What are enzymes? List out the factors affecting enzyme activity. (5)

(b) Derive an equation to show that the velocity of enzyme catalysed reaction is dependent on the substrate concentration. (10)

2. (a) List out the various pathways of carbohydrate metabolism. (5)

(b) Describe the secondary pathway for the oxidation of glucose and add a note on its significance. (10)

3. (a) Describe the fatty acid synthase complex. (5)
(b) Describe the *de novo* biosynthesis of fatty acids. (10)

4. (a) List out the steps involved in the breakdown of amino acids. (5)

(b) Describe the complete breakdown of any one amino acid. (10)

II. Short notes :

(8 × 5 = 40)

Answer any EIGHT questions.

1. What are carbohydrates? Classify them with examples.

2. Describe IUB nomenclature and classification of enzymes.

3. Write a note on enzyme inhibition.

4. Describe the coenzymatic role of thiamine and pyridoxine.

5. Describe the *pyruvate dehydrogenase complex* and its reactions.

6. Explain the reactions involved in the breakdown of purine nucleotides.

AUGUST - 2005

7. Describe *gluconeogenesis* in brief and give its significance.
 8. Write notes on Genetic code.
 9. Write the structure of t-RNA and give its function.
 10. Liver function Tests.
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FEBRUARY - 2006

[KO 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay : (2 × 15 = 30)
Answer any TWO full questions.

1. (a) What are enzymes? Derive the equation K_m (Michaelis-Menten constant) = $[S]$. (2 + 6)

(b) Explain the mechanism of action of enzymes and discuss about the enzyme inhibition. (3 + 4)

2. (a) Write the classification of carbohydrates and explain the chemical reactions involved in glycolysis. (2 + 6)

(b) Describe the pentose phosphate pathway and its importance. (5 + 2)

3. (a) Describe the extra mitochondrial synthesis of palmitic acid. (8)

(b) Explain the production and utilization of ketone bodies. (3 + 4)

4. Describe the chemistry, dietary sources, functions and deficiency manifestations of

(a) Vitamin 'A' and

(b) Vitamin 'C'. (8 + 7)

II. Short notes on : (8 × 5 = 40)

Write short answers on any EIGHT of the following.

1. Biological importance of calcium in the body.

2. Liver function tests.

3. Nucleic acids.

4. Essential fatty acids.

5. Beta (β) oxidation of fatty acids.

6. Metabolic disorders of Urea cycle.

7. Hormones produced from anterior pituitary gland and their functions.

FEBRUARY - 2006

- 8. Coenzymes.
 - 9. Lipoproteins.
 - 10. DNA replication.
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AUGUST - 2006

[KP 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Essay on :

Answer any TWO questions.

1. (a) Describe the Hexose monophosphate shunt pathway. Give its metabolic significance.

(b) Explain Gluconeogenesis and its significance.
(12 + 8 = 20)

2. Outline the reactions in the conversion of pyruvate to Acetyl CoA. Describe in detail Citric Acid cycle with energetics. (20)

3. (a) Write the chemistry, biological functions, deficiency manifestations of Vitamin A.

(b) Name any two co-enzymes and give their biochemical functions.
(15 + 5 = 20)

4. (a) Outline the biosynthesis of cholesterol. Add a note on its regulation.

(b) What are platelets? Mention their role in the body.
(15 + 5 = 20)

II. Short notes :

(6 × 5 = 30)

Answer any SIX questions.

1. Describe the renal function tests.

2. Explain the biological significance of cyclic AMP.

3. Write the role of phosphorus and magnesium in the body.

4. Describe the Watson-Crick structure of DNA.

5. What are Ketone bodies? How Ketosis is produced in the body?

6. Write an account of digestion and absorption of proteins in the body.

7. What are Enzymes? Explain the mechanism of Enzyme action.

8. Discuss the primary and secondary structure of protein.

AUGUST - 2006

[KP 739]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 20 = 40)

Answer any TWO questions.

1. What are enzymes? Classify them with examples with a note on co.enzymes.
2. Define nucleosides and nucleotides? How are purine nucleotides synthesized in the body? Explain in detail.
3. Explain citric acid cycle with its significance.
4. What are lipids? Explain the β - oxidation of lipids explain the biosynthesis of RNA.

II. Short notes :

(6 × 5 = 30)

Write any SIX questions.

1. Transport processes across cell membrane.
2. What are essential aminoacids? Explain the metabolism of tyrosine.
3. Explain the biochemical role of vit-C.
4. Explain the biochemical role of insulin.
5. Explain enzyme induction and repression in brief.
6. Explain three liver function tests.
7. DNA replication.
8. Metabolic disorders of urea cycle.

FEBRUARY - 2007

[KQ 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIO-CHEMISTRY

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Essay on : (2 × 20 = 40)

Answer any TWO questions.

1. (a) Discuss the properties of proteins.
(b) Classify amino acids with examples.
2. (a) Enumerate the enzyme activity affecting factors.
(b) Outline the reactions of β -oxidation of fatty acids.
3. (a) Give a brief account of the different transport processes across bio membranes.
(b) Discuss the reaction of gluconeogenesis.

4. (a) Write in detail about the coenzyme form, biochemical function, deficiency diseases of Thiamine.

(b) Discuss the metabolism of Iron.

II. Short notes : (6 × 5 = 30)

Answer any SIX questions.

1. Discuss the biochemical functions of anterior pituitary hormones.
2. Narrate the nutritional importance of carbohydrate, lipid and proteins.
3. Give an account of the biochemistry of urine.
4. Discuss the reactions involved in detoxification with suitable examples.
5. Outline the reaction involved in urea cycle.
6. Discuss the structure of DNA.
7. Give an account of the structures and function of immunoglobulins.
8. Classify carbohydrates with suitable examples.

FEBRUARY - 2007

[KQ 739]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Regulations 2004)

Paper I – BIOCHEMISTRY

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 20 = 40)

Answer any TWO questions.

1. Discuss enzyme kinetics with a note on Michaelis-Menton equation.
2. What are Carbohydrates? Classify them. Describe in detail gluconeogenesis.
3. Describe genetic organization of mammalian genome.
4. What are nucleosides and nucleotides? Explain the biosynthesis of pyrimidine nucleotides.

II. Short notes.

(6 × 5 = 30)

Write any SIX questions.

1. What are coenzymes? Describe their biochemical role.
 2. Ketosis.
 3. Describe metabolism of phenyl alanine.
 4. Explain the role of immunoglobulins.
 5. Describe the biochemical role of Vitamin-C.
 6. Explain the biochemical role of insulin.
 7. Significance of blood analysis.
 8. Explain the biochemical role of sodium and calcium.
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[KR 706]

Sub. Code : 4181

SECTION B — (8 × 5 = 40 marks)

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIO-CHEMISTRY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. What are proteins? Classify them with examples and describe the biosynthesis of proteins.
2. Name the various pathways of carbohydrate metabolism. Describe the oxidation of glucose and its bioenergetics.
3. What are coenzymes? Describe the chemistry, source, biochemical role, daily requirements and deficiency manifestations of folic acid.
4. Define and classify lipids with examples. Describe the biosynthesis of fatty acid and its significance.

Answer any EIGHT of the following.

1. Describe the reactions and importance of urea cycle.
2. Write notes on nucleoproteins.
3. Describe the structure and functions of t-RNA.
4. Explain the chemical nature and biochemical functions of insulin.
5. Describe the mechanism of action of enzymes.
6. Name and describe the functions of poly unsaturated fatty acids.
7. Describe the Michaelis-Menten equation.
8. Liver function tests.
9. Describe the pyruvate dehydrogenase complex and its reactions.
10. Describe the biosynthesis of proline.

August-2007

[KR 739]

Sub. Code : 4230

FIRST B.Pharm. DEGREE EXAMINATION.

(Regulation 2006–2007 onwards)

(Common to IInd B.Pharm. Paper I — Regulation 2004)

Paper IV — BIO-CHEMISTRY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay : (2 × 15 = 30)

Answer any TWO questions.

1. (a) Classify proteins with suitable examples.
(b) Discuss the reactions of β -oxidation.
2. (a) Briefly describe the reactions of hexose monophosphate shunt. What is its significance?
(b) Determine Michaeli's Menten equation for unienzyme and unisubstrate reaction. What is the significance of K_M ?

3. (a) Discuss about the source, chemistry and biochemical functions of riboflavin.

(b) Describe any two functional tests of liver.

4. (a) Give a short account of the sources, biochemical functions and deficiency diseases of calcium.

(b) Discuss the structures of DNA.

II. Short notes : (8 × 5 = 40)

Answer any EIGHT questions.

1. Functions and structure of cholesterol.
2. Separation of proteins.
3. Coenzyme forms and biochemical functions of pyridoxine.
4. Structures and functions of thyroxin.
5. Clinical application of enzymes.
6. Determination of standard free energy and its significance.
7. Brief account of genetic engineering.

8. Beri Beri.

9. Transport across membranes.

10. tRNA.

[KS 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIO-CHEMISTRY

Q.P. Code : 564181

Time : Three hours Maximum : 90 marks

Theory : Two hours and Theory : 70 marks
forty minutes

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

I. Long essay : (2 × 15 = 30)

Answer any TWO questions.

1. (a) Explain in detail, biosynthesis of palmitic acid.

(b) Give an account on active transport.
(10 + 5 = 15)

2. (a) Explain the schematic representation of glycolysis.

(b) Discuss the enzymes of electron transport chain.
(10 + 5 = 15)

3. (a) Enumerate the various types of enzyme inhibition.

(b) Discuss the biological role of sodium.
(10 + 5 = 15)

4. (a) Write in detail about the source, daily requirement, biological functions and deficiency status of Vitamin-A.

(b) . Explain the structure of t-RNA. (10 + 5 = 15)

II. Short notes : (8 × 5 = 40)

Answer any EIGHT questions.

(1) Outline the reactions of glycogenolysis.

(2) Give an account on enzyme classification.

(3) Classify lipids with suitable example.

(4) Enumerate the secondary structure of protein.

(5) Write a note on Thiamine pyrophosphate.

(6) What are ketosis? How ketosis is produced in the body?

(7) Explain the term Basal Metabolic Rate.

(8) Haemoglobin.

(9) Passive diffusion and active transport.

(10) Write a short note on Heteropolysaccharides.

February-2008

[KS 739]

Sub. Code : 4230

FIRST B.Pharm. DEGREE EXAMINATION.

(Regulation 2006–2007 onwards)

(Common to IInd B.Pharm. Paper I — Regulation 2004)

Paper IV — BIO-CHEMISTRY

Q.P. Code : 564230

Time : Three hours

Maximum : 90 marks

**Descriptive : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay : (2 × 15 = 30)

Answer any TWO questions.

1. (a) Outline the stages involved in the elimination of protein nitrogen. (10)

(b) Explain essential amino acids. (5)

2. (a) Discuss the anaerobic oxidation of glucose. (10)

(b) Write a note on reducing sugars. (5)

3. (a) Define the term vitamin and write about the sources, biochemical role, deficiency disorders of Thiamine, Niacin and cyanocobalamin. (10)

(b) Explain the sources and biochemical role of vitamin C. (5)

4. (a) What are the various factors influencing enzyme action? (10)

(b) Explain competitive inhibition. (5)

5. Write short notes on : (8 × 5 = 40)

Answer any EIGHT questions.

(a) Genetic code.

(b) Isoenzymes.

(c) Reactions of beta-oxidation.

(d) Mucopolysaccharides.

(e) Essential Fatty acids.

(f) Lipoproteins.

(g) Immunoglobulins.

(h) Sodium pump.

(i) Biochemical role of vitamins D.

(j) Basal Metabolic Rate.

August 2008

[KT 706]

Sub. Code : 4181

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIO-CHEMISTRY

Q.P. Code : 564181

Time : Three hours

Maximum : 90 marks

I. Long Essay : (2 × 20 = 40)

Answer any TWO questions.

1. (a) Write in detail about the source daily requirement, biological functions and deficiency status of Vitamin C. (10)
(b) Discuss Biosynthesis of Heme. (10)
2. (a) Give a brief account of the different transport process across biomembranes. (10)
(b) Describe the citric acid cycle with energetics. (10)
3. (a) What are lipids? Explain the β -oxidation of lipids. (10)
(b) Explain the role of immunoglobulins. (10)

August 2008

II. Short notes : (8 × 5 = 40)

Answer any EIGHT questions.

1. DNA-structure.
2. Describe the renal function tests.
3. What are enzymes? Classify with suitable examples.
4. Describe the pyruvate dehydrogenase complex and its reactions.
5. Phenylketonuria.
6. Heteropolysaccharides.
7. Pyrimidine biosynthesis.
8. Bile salts.
9. Role of insulin.
10. Oxidative level phosphorylation.

III. Short answers : (5 × 2 = 10)

Answer any FIVE questions.

1. Distinguish Glucagon and glycogen.
2. Define coenzyme with examples.

3. Name essential aminoacids.

4. Name Normal constituents of urine.

5. Rothra's test.

6. Atherosclerosis.

7. Codons.

August 2008

[KT 739]

Sub. Code : 4230

FIRST B.Pharm. DEGREE EXAMINATION.

(Regulation 2006-2007 onwards)

(Common to Second B.Pharm. Paper I —
Regulation 2004)

Paper IV — BIO-CHEMISTRY

(Q. P. Code : 564230)

Time : Three hours

Maximum : 90 marks

I. Long Essay : (2 × 20 = 40)

Answer any TWO questions.

1. (a) Write in detail about the sources, chemistry, biochemical role, daily requirements and deficiency manifestations of vitamin A. (1 + 3 + 4 + 1 + 1)

(b) Discuss the metabolism of Sodium. (10)

2. (a) Describe the metabolic pathways of thyrosine. (7.5)

(b) Discuss the reaction of beta oxidation of palmitic acid with energetics. (7.5)

(c) Biosynthesis of Ketone bodies. (5)

August 2008

3. (a) Explain the biosynthesis of bile pigments in the body. (10)
- (b) Structure of t-RNA. (6)
- (c) What are nucleosides and nucleotides? Give examples. (4)

II. Write Short notes on : (8 × 5 = 40)

Answer any EIGHT question.

1. Reducing disaccharides.
2. Clearance tests of Urine.
3. Specific dynamic action.
4. Lac-operon concept.
5. rDNA technology.
6. Eicosanoids.
7. Structure and biochemical functions of insulin.
8. Digestion and absorption of carbohydrate.
9. Nucleoprotein.
10. Enzyme inhibition.

III. Write short answers on : (5 × 2 = 10)

Answer any FIVE questions.

1. What is epimer? Give example.
 2. Define the terms : transcription and translation.
 3. Give any two coenzyme activities of pyridoxal phosphate.
 4. What is denaturation? Give examples for denaturing agents.
 5. Give examples of bile pigments and bile salts.
 6. What is saponification number? Give its significance.
 7. What is basal metabolic rate?
-

February 2009

[KU 706]

Sub. Code: 4181

SECOND B.PHARM. DEGREE EXAMINATION

(ReRevised Regulations)

Candidates Admitted upto 2003-04

Paper I – BIO-CHEMISTRY

Q.P. Code : 564181

Time : Three hours

Maximum : 90 marks

I. Essay Questions : Answer any TWO questions (2 x 20 = 40)

1. Describe in detail about the citric acid cycle with energetics and its regulation. **(20)**
2. Explain briefly about the Biosynthesis and degradation of Tyrosine, phenylalanine and its metabolic disorders. **(20)**
3. a) Enumerate the various types of Enzyme inhibition with suitable example. **(10)**
b) Explain in detail about the digestion and absorption of carbohydrates. **(10)**

II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)

1. Explain about mucopolysaccharides with examples.
2. Write the process of β – oxidation of palmitic acid with energetics.
3. Write about non-protein nitrogenous substances with examples.
4. Write the sources, chemistry and biochemical role of vitamin A.
5. Define co-enzymes and explain any two co-enzymes with biochemical function.
6. What is meant by rate regulating step in metabolism and state that regulation step in glycolysis?
7. Explain about liver function test, describe in detail about vanderberg reaction with its significance.
8. Discuss the structure of DNA.
9. Give an account of the structure and function of immunoglobulins.
10. Write about the general mechanism of action of peptide hormones.

III. Short Answers: Answer any FIVE questions (5 x 2 = 10)

1. What are the different mechanisms of transport across the membrane?
2. What are the factors that regulate plasma calcium level?
3. What are the functions of vitamin K?
4. What is meant by co-enzyme? Give examples.
5. Explain about ketogenesis.
6. Write the normal constituents of urine.
7. Differentiate reducing sugars and non-reducing sugars.

August 2009

[KV 706]

Sub. Code: 4181

SECOND B.PHARM. DEGREE EXAMINATION

(ReRevised Regulations)

Candidates Admitted upto 2003-04

Paper I – BIO-CHEMISTRY

Q.P. Code : 564181

Time : Three hours

Maximum : 90 marks

I. Essay Questions : Answer any TWO questions (2 x 20 = 40)

1. a) What are carbohydrates? Classify them, Describe in detail about homopolysachrides.
b) Discuss the TCA cycle with its energetics.
2. a) What are enzymes? Classify them. Explain the various factors affecting enzyme action.
b) Write in detail about the sources, chemistry, biochemical role and deficiency manifestations of vitamin – A.
3. a) Explain the biosynthesis of pyrimidine nucleotides.
b) Discuss the metabolism of sodium.

II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)

1. Describe the properties of fats.
2. Role of Insulin.
3. Structure of immunoglobulin.
4. Biosynthesis of ketone bodies.
5. Metabolism of phenylalanine.
6. Co-enzymes. cc
7. Structure of t.RNA.
8. Mode of action of drugs.
9. Transport across bio membranes.
10. Urea cycle.

III. Short Answers: Answer any FIVE questions (5 x 2 = 10)

1. Name the essential fatty acids.
2. Significance of HMP shunt pathway.
3. Name the purine bases with their structures.
4. Carr – Price test.
5. Define Iodine value. Give its significance.
6. Write any two enzymes of clinical importance.
7. Deficiency diseases of thiamine.

February 2010

[KW 706]

Sub. Code: 4181

SECOND B.PHARM. DEGREE EXAMINATION

(ReRevised Regulations)

Candidates Admitted upto 2003-04

Paper I – BIO-CHEMISTRY

Q.P. Code : 564181

Time : Three hours

Maximum : 90 marks

I. Essay Questions : Answer any TWO questions (2 x 20 = 40)

1. a) What are proteins? Classify them. Explain urea cycle in detail. (10)
b) Explain the enzyme kinetics with Michaelis-menton equation.(10)
2. a) Describe Glycolysis with its energetics. (10)
b) Write in detail about the sources, chemistry, biochemical role and deficiency diseases of thiamine. (10)
3. a) Discuss in detail about the biosynthesis of fatty acids. (10)
b) Enumerate various liver function tests and explain any two of them.(10)

II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)

1. Waldo cycle.
2. Properties of carbohydrates.
3. Structure of DNA.
4. Biochemical role of thyroxine.
5. Calcium.
6. Ketosis.
7. Vitamin – C.
8. Enzyme inhibition.
9. Nutritional significance of lipids.
10. Properties of amino acids.

III. Short Answers: Answer any FIVE questions (5 x 2 = 10)

1. Examples for bile salts and bile pigments.
2. Role of carnitine in lipid metabolism.
3. Name the pyrimidine bases with their structure.
4. Rothra's test.
5. Define mutarotation.
6. Co-enzyme activities of niacin.
7. Gout.

September 2010

[KX 706]

Sub. Code: 4181

SECOND B.PHARM. DEGREE EXAMINATION
(ReRevised Regulations)Candidates Admitted upto 2003-04

Paper I – BIO-CHEMISTRY

Q.P. Code : 564181

Time : Three hours

Maximum : 90 marks

I. Essay Questions :

(2 X 20 = 40)

Answer any TWO questions.

1. a) Write in detail about the sources, chemistry, bio-chemical role, daily requirements and deficiency manifestations of vitamin-D.
b) Discuss the TCA cycle with its energetics.
2. a) Explain the bio synthesis of bile pigments in the body.
b) Role of Insulin
c) What are the nucleosides and nucleotides? Give examples.
3. a) Sketch urea cycle and mention the inherited disorders.
b) Discuss the metabolism of Sodium

II. Write Short Notes :

(8X 5 = 40)

Answer any EIGHT questions.

1. Clearance tests of urine.
2. Prostaglandins
3. Basal Metabolic Rate
4. Lac-Operon Concept
5. Co-Enzymes
6. Immunoglobulin
7. Nucleo Protein
8. Enzyme Inhibition
9. Digestion and absorption of Carbohydrate
10. Mode of action of drugs.

III. Short Answers:

(5X2 = 10)

Answer any FIVE questions.

1. What is specific dynamic action?
2. Significance of HMP shunt pathway.
3. What is Epimer? Give example
4. Iodine Number
5. Define Detoxication
6. Define the terms: transcription and translation
7. Give examples of bile pigments and bile salts.
