

AUGUST 2004

[KL 1501]

Sub. Code : 1501

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I — BIOCHEMISTRY

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and Sec. A & B : 80 marks
forty minutes

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

Answer Sections A and B in SAME Answer Book.

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

1. Explain in detail about Vitamin D under the following headings :

- (a) Chemistry**
- (b) Dietary sources**
- (c) RDA**
- (d) Synthesis**
- (e) Biochemical functions**
- (f) Deficiency manifestations.**

(2 + 2 + 1 + 2 + 5 + 3)

2. Describe the HMP shunt pathway under the following headings :

- (a) Definition**
- (b) Site**
- (c) Reaction sequence**
- (d) Regulation**
- (e) Inborn errors**
- (f) Significance. (1 + 1 + 5 + 2 + 2 + 4)**

SECTION B — (10 × 5 = 50 marks)

Write short notes on :

- 3. Phospholipids**
- 4. Transcription**
- 5. Urea cycle**
- 6. Basal metabolic rate**
- 7. Ketogenesis and ketoacidosis**
- 8. Plasma proteins**
- 9. Serum electrophoresis**
- 10. Calcium homeostasis**
- 11. Renal function tests**
- 12. Functions of active methionine.**

FEBRUARY 2005

[KM 1501]

Sub. Code : 1501

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 100 marks

**Sec. A & B : Two hours and
forty minutes**

Sec. A & B : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

SECTION A — (2 × 15 = 30 marks)

Answer ALL questions.

Essay Questions :

1. What is the normal plasma calcium level? Explain in detail about the sources, daily requirements, biochemical functions and deficiency manifestations of CALCIUM. Add a note on its regulation.
2. What is the normal pH of blood? Explain in detail about regulation of acid-base balance. Add a note on metabolic acidosis.

SECTION B — (10 × 5 = 50 marks)

Answer ALL questions.

3. Homopolysaccharides.
4. Iron absorption, transport and storage.
5. Enumerate the reactions of Urea cycle.
6. Balanced diet.
7. Paper chromatography.
8. Prostaglandins.
9. Liver function tests.
10. Replication.
11. Biochemical functions and deficiency manifestations of Vitamin C.
12. Denaturation of proteins.

AUGUST 2005

[KN 1501]

Sub. Code : 1501

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I — BIOCHEMISTRY

Time : Three hours Maximum : 100 marks

Theory : Two hours and Theory : 80 marks
forty minutes

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

Answer ALL questions

I. Long Essay (2 × 15 = 30)

1. What are vitamins? Describe in detail about the sources, daily requirements, synthesis, functions and biochemical manifestations of 'Vitamin A'

2. What is beta – oxidation of fatty acid? Describe the reactions and give energetics for the beta – oxidation of palmitic acid.

II. Short notes on : (10 × 5 = 50)

1. Degradation of purine nucleotides

2. Serum electrophoresis

3. Basal metabolic rate

4. Absorption of glucose

5. Role of kidney in regulation of pH

6. Phospholipids

7. Structure of cell membrane

8. Importance of glycine

9. Electron transport chain

10. Sickle cell anaemia.

FEBRUARY 2006

[KO 1501]

Sub. Code : 1501

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I — BIOCHEMISTRY

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay : (2 × 15 = 30)

1. What are vitamins? Explain the dietary sources, Chemistry, RDA, Biochemical functions and deficiency manifestations of vitamin 'A' in the body.

2. "TCA cycle is amphibolic in nature". Justify the statement.

II. Short notes : (10 × 5 = 50)

1. Structure of cell membrane.
2. Absorption, transport and storage of iron.
3. Phospholipids.
4. Role of kidney in regulation of pH.
5. Genetic code.
6. Basal Metabolic rate.
7. Ketogenesis.
8. Obesity.
9. Urea Cycle.
10. Effect of temperature and products on enzyme activity.

August 2008

[KT 1501]

Sub. Code : 1501

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I — BIOCHEMISTRY

Q.P. Code : 821501

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Essay Question : (2 × 15 = 30)

- 1. Explain Briefly about the citric acid cycle and Energetics of citric acid cycle.**
- 2. Describe Briefly about the structure of Vitamin A Bio-synthesis, Metabolism, Excreation, Functions and the Deficiency Manifestations.**

August 2008

II. Short notes : (10 × 5 = 50)

1. Write a short note on aminoacids and its classification.

2. Chromatography.

3. Write a short note on Fatty acids.

4. Co-enzymes.

5. Ascorbic acid.

6. Hypokalemia.

7. Short note on Glucagon.

8. Renal Function Test.

9. Liver Function Test.

10. Short note on Lipoprotein.

III. Short Answers : (10 × 2 = 20)

1. Gluconeogenesis.

2. Steroids.

3. Rancidity.

4. Fatty Liver.

5. Cystinuria.

6. Hyper calcemia.

7. Hay's Test.

8. Hypo Albuminemia.

9. Tocopherols.

10. Oligo saccharides.

August 2009

[KV 1501]

Sub. Code: 1501

B.N.Y.S DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I – BOCHEMISTRY

Q.P. Code : 821501

Time : Three hours

Maximum : 100 marks

Draw neat diagram wherever necessary.

Answer ALL questions.

I. Essay Questions:

(2 x 15 = 30)

1. Oxidative phosphorylation.
2. Definition, classification, and biological importance of carbohydrates. Add a note on Gluconeogenesis.

II. Short Notes on :

(10 x 5 = 50)

1. Female sex hormones.
2. Protein energy malnutrition.
3. Principle of calorimetry.
4. BMR and its importance.
5. Structure of insulin.
6. Fluorine.
7. Functions of immunoglobulins.
8. Amino acid pool.
9. Paper chromatography.
10. Prostaglandin.

III. Short Answers:

(10 x 2 = 20)

1. Vant Hoff's rule of 'n'.
 2. Isomerism.
 3. Messenger 'RNA'.
 4. Essential fatty acids.
 5. Wernicke's encephalopathy.
 6. GTT curve.
 7. Rhodopsin cycle.
 8. Alcaptonuria.
 9. Function of Vit. 'E'.
 10. Structure of heme.
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February 2010

[KW 1501]

Sub. Code: 1501

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I – BOCHEMISTRY

Q.P. Code : 821501

Time : Three hours

Maximum : 100 marks

I. Long Essay:

(2 x 15 = 30)

1. Explain about Vitamin A under the following headings:
 - (a) Chemistry.
 - (b) RDA.
 - (c) Dietary sources.
 - (d) Absorption.
 - (e) Circulation and storage.
 - (f) Metabolic functions.
 - (g) Deficiency manifestations.
2. Give an account of the citric acid cycle and explain why it is called a common metabolic pathway.

II. Short Notes on :

(10 x 5 = 50)

1. Structure of DNA.
2. Digestion and absorption of lipids.
3. Classification of Enzymes.
4. Functions of sodium.
5. Catabolism of purines.
6. Transcription.
7. Riboflavin.
8. Unsaturated fatty acids.
9. Electro phoresis.
10. Glucose tolerance test.

III. Short Answers:

(10 x 2 = 20)

1. Define Dextran.
 2. Saponification.
 3. Write any two physiological functions of retinol.
 4. Deficiency manifestations of pellagra.
 5. Write any two biological functions of Nucleic Acid.
 6. Define buffer.
 7. Define ATP.
 8. Chylomicrons.
 9. Name the conditions where the acetone is present in the urine.
 10. Define BMR.
-

August 2010

[KX 1501]

Sub. Code: 1501

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I – BOCHEMISTRY

Q.P. Code : 821501

Time : Three hours

Maximum : 100 marks

Draw neat diagram wherever necessary.

Answer ALL questions.

I. Essay Questions:

(2 x 15 = 30)

1. Explain TCA cycle under the following headings:
 - (a) Pathway.
 - (b) Significance.
 - (c) Energetics.
 - (d) Inhibitors.
2. Explain about enzymes under the following headings:
 - (a) Definition.
 - (b) Classification.
 - (c) Isoenzymes.
 - (d) Diagnostic importance.

II. Short Notes on :

(10 x 5 = 50)

1. Denaturation of proteins.
2. Glycogen storage disease.
3. Lipoproteins.
4. Inhibitors of oxidative phosphorylation.
5. Balanced diet.
6. Biological functions of nucleic acids.
7. Urea synthesis.
8. Water balance, water gain and water lost.
9. Protein energy malnutrition.
10. Liver function test.

III. Short Answers:

(10 x 2 = 20)

1. Pernicious anaemia.
 2. Wilson's disease.
 3. Structure of DNA.
 4. What are catalyst?
 5. Cofactors.
 6. Functions of Immunoglobulins.
 7. Oncogenes.
 8. Anti scorbutic vitamin.
 9. Structure of Haemoglobin.
 10. Mutarotation.
-

February 2011

[KY 1501]

Sub. Code : 1501

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part I

Paper I — BIOCHEMISTRY

Q.P. Code : 821501

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Essay Questions : (2 × 15 = 30)

1. Explain briefly about the Gluconeogenesis and energetics formed in the gluconeogenesis and add a note on glycogen storage disorder?
2. Explain in detail about the colorimetry, paper chromatography and Electrophoresis.

II. Short notes : (10 × 5 = 50)

1. Write a short note on liver function test, detoxification mechanism.
2. Regulation of P_H of blood.
3. Bio-synthesis of pyrimidine Ribo nucleotides.
4. Describe briefly about the urea cycle formation of glutamate and glutamine disorders of Amino acids.
5. Write a short note on function of sub-cellular structures.
6. Write note on the copper metabolism, RDA, Biochemical functions and deficiency manifestations.
7. Water Metabolism.
8. Amino acid Pool.
9. Henderson's - Haselbach equation?
10. Structure of collagen and myoglobin.

III. Short Answers :

(10 × 2 = 20)

1. Denaturation of Proteins.
 2. Structure of Haemoglobin.
 3. Types of RNA
 4. Pellagra.
 5. Essential Fatty acids
 6. Define Purines.
 7. Creatinine clearance test.
 8. Define Glycogenolysis.
 9. Difference between Acidosis and Alkalosis.
 10. Fatty liver.
-

[LB 1501]

Sub. Code: 1501

FIRST YEAR B.N.Y.S. DEGREE EXAM – AUGUST 2012

Paper – I BIOCHEMISTRY

Q.P. Code: 821501

Time: Three Hours

Maximum: 100 marks

(180 Min) Answer ALL questions in the same order.

I. Elaborate on:

**Pages Time Marks
(Max.)(Max.)(Max.)**

- | | | | |
|---|----|----|----|
| 1. Explain Vitamin – A Classification, Chemistry, Properties, Absorption, deficiency and Rhodopsin Cycle. | 16 | 25 | 15 |
| 2. Explain Classification of Carbohydrates and stereo isomerism. | 16 | 25 | 15 |

II. Write notes on:

- | | | | |
|----------------------------------|---|---|---|
| 1. Write Kidney Function Test. | 3 | 8 | 5 |
| 2. Explain Steroids. | 3 | 8 | 5 |
| 3. TCA Cycle. | 3 | 8 | 5 |
| 4. Regulation of Blood Sugar. | 3 | 8 | 5 |
| 5. Explain BMR. | 3 | 8 | 5 |
| 6. Krebs-Henseleit Cycle. | 3 | 8 | 5 |
| 7. Explain Calcium. | 3 | 8 | 5 |
| 8. Explain DNA and RNA. | 3 | 8 | 5 |
| 9. Hemoglobin. | 3 | 8 | 5 |
| 10. Purine and Pyrimidine bases. | 3 | 8 | 5 |

II. Short Answers:

- | | | | |
|---------------------------------------|---|---|---|
| 1. Saturated Fatty acids. | 1 | 5 | 2 |
| 2. Protein Energy malnutrition (PEM). | 1 | 5 | 2 |
| 3. Jaundice. | 1 | 5 | 2 |
| 4. Vitamin – B12. | 1 | 5 | 2 |
| 5. Structure of Insulin. | 1 | 5 | 2 |
| 6. Chromatography. | 1 | 5 | 2 |
| 7. Water Metabolism. | 1 | 5 | 2 |
| 8. PH. | 1 | 5 | 2 |
| 9. Scurvy. | 1 | 5 | 2 |
| 10. Trioses. | 1 | 5 | 2 |

**[LC 1501]
1501**

Sub. Code:

FIRST YEAR B.N.Y.S. DEGREE EXAM – FEBRUARY 2013

Paper I - BIOCHEMISTRY

Q.P. Code: 821501

Time: Three Hours

Maximum: 100 marks

ANSWER ALL QUESTIONS

I.Long Essay:

Marks 2x15=30

- 1.Describe briefly about the disorders of carbohydrate metabolism, regulation of blood sugar and significance of glucose tolerance test.
- 2.Explain briefly about the energy metabolism and add a note on
 - a.Dietary habits and diseases.
 - b.Biochemistry of starvation.

II.Short notes:

Marks 10x5=50

- 1.Biosynthesis of lecithin and cephalin
- 2.Detoxification mechanisms of liver.
- 3.Urea clearance and creatinine clearance.
- 4.Iron metabolism.
- 5.Biological oxidation.
- 6.Write a short notes on arsenic, mercury, and metal toxicity.
- 7.Regulation of metabolic pathways of carbohydrate.
- 8.Write a note on cyanogobalamine.
- 9.Metabolism of galactose.
- 10.Disposal of ammonia.

III.Short answers:

Marks 10x2=20

- 1.Sources of iron.
- 2.Classification of minerals.
- 3.Glycogenolysis.
- 4.GOUT
- 5.Differentiate between Kwashiorkor and Marasmus.
- 6.Recommended dietary allowance of Vitamin c.
- 7.Eicosanoids.
- 8.Amphipathic lipids.
- 9.Protamines.
- 10.Ribosomal RNA.

[LD 1501]

Sub. Code: 1501

FIRST YEAR B.N.Y.S. DEGREE EXAM – AUGUST 2013

Paper I - BIOCHEMISTRY

Q.P. Code: 821501

Time: Three Hours

Maximum: 100 marks

ANSWER ALL QUESTIONS

I.Long Essay:

Marks 2x15=30

1.Explain in Detail about the Principles of Colorimetry, Paper chromatography and Electrophoresis

2.Explain in Detail about the Electrolytes in Body and Water Metabolism

II.Short note:

Marks 10x5=50

- 1.Digestion and Absorption of carbohydrates.
- 2.Compare the Structure of Hemoglobin and Myoglobin.
- 3.Denaturation of Proteins.
- 4.Stereoisomerism of Carbohydrates.
- 5.Purines and Pyrimidine.
- 6.Glucose Tolerance Test.
- 7.Functions and Formation of Prostaglandins.
- 8.Lipotropic Factors.
- 9.Disorders of Aminoacids Metabolism.
- 10.Utilisation of Ketonebodies.

III.Short Answers:

Marks 10x2=20

- 1.Creatinine Clearance Test
- 2.PEM
- 3.Peptides
- 4.Acids Buffer
- 5.Nucleic acids
- 6.Albumin
- 7.Jaundice
- 8.Define Vitamins
- 9 Triacylglycerol
- 10.Pellagra

FIRST YEAR B.N.Y.S. DEGREE EXAM

PAPER I – BIOCHEMISTRY

Q.P. Code : 821501

Time: Three hours

Maximum : 100 Marks

Answer All questions

I. Essays Questions: (2X15=30)

1. Principles of Colorimetry, Paper chromatography and electrophoresis Henderson-Haselbasch Equation
2. Outline of Synthesis of Purine and Pyrimidine and Disorders of Metabolism of Purine and Pyrimidine

II. Short notes: (10x5=50)

1. Digestion and absorption of Carbohydrates
2. Metabolism of Fructose and Galactose
3. Fatty Liver and Lipotropic Factors
4. Electrolytes Metabolism
5. Kidney Function test
6. Balanced diet
7. Transport across the cell membrane
8. Biochemistry of Starvation
9. Write a note on Ketogenesis
10. Functions of Hemoglobin

III. Short answers: (10x2=20)

1. Deficiency of vitamin A
2. Classification of Nucleic acids
3. Plasma proteins
4. Urea cycle
5. What is a Cofactor?
6. Types of Aminoacids
7. Disorders of Iron Deficiency
8. Stereoisomerism
9. Isoenzymes
10. Myoglobin

FIRST B.N.Y.S. DEGREE EXAMINATION

PAPER I – BIOCHEMISTRY

Q.P. Code : 821501

Time: Three hours

Maximum : 100 Marks

Answer All questions

I. Essay Questions:

(2 X 15 = 30)

1. What are vitamins? Describe in detail about the sources, daily requirements, synthesis, functions and deficiency manifestations of Vitamin A.
2. Explain about the chemistry of proteins with examples?

II. Short Notes:

(10 X 5 = 50)

1. Explain about cell membrane and mitochondria.
2. Explain monomeric units of Nucleic acids.
3. Write about Lipoproteins.
4. Explain digestion and absorption of carbohydrates.
5. Write a note on Glycogen storage diseases.
6. Explain Myoglobin in detail.
7. Explain the DNA structure.
8. Biochemistry of starvation.
9. Calcium absorption, transport and storage.
10. Explain about denaturation of proteins.

III. Short Answers:

(10 X 2 = 20)

1. Define Carbohydrates.
2. What is protein?
3. What is meant by lipids?
4. Define pH.
5. Types of Amino acids.
6. What is isoenzyme?
7. What is sickle cell anemia?
8. What are ketone bodies?
9. What is translation?
10. Define acids and bases.

FIRST B.N.Y.S. DEGREE EXAMINATION

PAPER I – BIOCHEMISTRY

Q.P. Code : 821501

Time: Three Hourss

Maximum : 100 Marks

Answer All questions

I. Essay Questions:

(2 x 15 = 30)

1. Elaborate Embden-Meyerhof pathway of Glycolysis with flow chart.
2. Elaborate the chemistry of lipids with suitable examples.

II. Short Notes:

(10 x 5 = 50)

1. Explain phospholipids.
2. Renal function tests.
3. Explain the functions of haemoglobin.
4. Explain Urea cycle.
5. Write a note on sunshine vitamin.
6. Write about basal metabolic rate.
7. Explain serum electrophoresis.
8. Explain about iron absorption and storage.
9. Write a note on replication.
10. Explain vitamin B12.

III. Short Answers:

(10 x 2 = 20)

1. What is oxidation and reduction?
2. Define stereoisomerism.
3. What is prostaglandin?
4. What is mucopolysaccharide?
5. What is High Density Lipoprotein?
6. Define enzymes.
7. Name the buffer systems.
8. What is collagen?
9. Explain beriberi.
10. What is malnutrition and starvation?

FIRST B.N.Y.S. DEGREE EXAMINATION

PAPER I – BIO - CHEMISTRY

Q.P. Code : 821501

Time: Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Explain in detail about the pH of blood and write a note on role of the kidney and lungs in maintaining the pH of blood.
2. Explain in detail about copper and zinc metabolism.

II. Write Notes on:

(10 x 5 = 50)

1. Different types of chromatography.
2. Explain about the structure of collagen, haemoglobin and myoglobin.
3. Biological importance of nucleic acid.
4. Explain about transcription, translation and recombination.
5. Write a note on cofactors and activators.
6. Write a note on rickets.
7. DNA damage and repair.
8. Write a note on pyridoxine metabolism.
9. Biological oxidation.
10. Lipotropic features and fatty liver.

III. Short Answers on:

(10 x 2 = 20)

1. Cephalin and lecithin.
2. Ketoacidosis.
3. Oncogenes.
4. Aliphatic amino acids.
5. Amino acid pool.
6. Iodine-deficiency.
7. Arachidonic acid.
8. Types of RNA.
9. Colorimetry.
10. Electrophoresis

FIRST B.N.Y.S. DEGREE EXAMINATION

PAPER I – BIO - CHEMISTRY

Q.P. Code : 821501

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(2 x 15 = 30)

1. Describe briefly about the disorders of carbohydrate metabolism, regulation of blood sugar and significance of glucose tolerance test.
2. Explain briefly about the energy metabolism and add a note on
 - a) Dietary habits and diseases.
 - b) Biochemistry of starvation.

II. Write Notes on:

(10 x 5 = 50)

1. Biosynthesis of lecithin and cephalin
2. Detoxification mechanisms of liver.
3. Urea clearance and creatinine clearance.
4. Write short on iron metabolism.
5. Biological oxidation.
6. Write a short note on arsenic, mercury and metal toxicity.
7. Regulation of metabolic pathways of carbohydrate.
8. Write note on cyanogobalamine.
9. Metabolism of galactose.
10. Disposal of ammonia.

III. Short Answers on:

(10 x 2 = 20)

1. Sources of iron.
2. Classification of minerals.
3. Glycogenolysis.
4. GOUT.
5. Difference between Kwashiorkor and Marasmus.
6. Recommended dietary allowance of vitamin C.
7. Eicosanoids.
8. Amphipathic lipids.
9. Protamines.
10. Ribosomal RNA.

FIRST B.N.Y.S. DEGREE EXAMINATION

PAPER I – BIO - CHEMISTRY

Q.P. Code : 821501

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(2 x 15 = 30)

1. Explain in detail about the Principles of Colorimetry, Paper chromatography and Electrophoresis.
2. Explain in detail about the Electrolytes in Body and Water Metabolism.

II. Write Notes on:

(10 x 5 = 50)

1. Digestion and Absorption of carbohydrates.
2. Compare the Structure of Hemoglobin and Myoglobin.
3. Denaturation of Proteins.
4. Stereoisomerism of proteins
5. Purines and Pyrimidine metabolism.
6. Glucose Tolerance Test.
7. Functions and Formation of Prostaglandins.
8. Lipotropic Factors.
9. Disorders of Amino acids Metabolism.
10. Utilisation of Ketone bodies.

III. Short Answers on:

(10 x 2 = 20)

1. Creatinine Clearance Test.
2. Protein Energy Malnutrition.
3. Define Peptides.
4. Acids, Bases and Buffers.
5. Write a note on Nucleic acids.
6. What is Albumin?
7. Define Jaundice.
8. Define Vitamins.
9. Triacylglycerol.
10. What is Pellagra? Which deficiency it will happen?
