APRIL 2003

[KI 872]   Sub. Code : 5002

B.Sc. (Medical Laboratory Technology) DEGREE
EXAMINATION.

First Year

Paper II — BASIC CHEMISTRY

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

1. Discuss the classification of proteins and their
important properties. Discuss the biological importance
of proteins.   (25)

2. (a) What is zwitter ion? Give its significance.   (2)

    (b) What are essential fatty acids? Give their
importance in biological system.   (3)

    (c) What is pH of a solution? What is the pH of
blood? Write a note on the maintenance of pH of blood.

                                                (10)

    (d) Discuss   the   biological   importance   of
carbohydrates.   (10)

3. Write short notes on : $(5 \times 10 = 50)$

    (a) Mitochondria.

    (b) Estimation of cholesterol.

    (c) Biological importance of steroids.

    (d) Co-enzymes.

    (e) Methods of Isolation of organelles.

[KJ 872]   Sub. Code : 5002

B.Sc. (Medical Laboratory Technology) DEGREE
EXAMINATION.

First Year

Paper II — BASIC CHEMISTRY

Time : Three hours   Maximum : 100 marks

Two hours and forty minutes

for Sec. A & Sec. B   Sec. A & Sec. B : 80 marks

Section C : Twenty minutes   Section C : 20 marks

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

Answer Section C in the Answer Sheet provided.

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

1. What are enzymes? How are they classified?
Discuss the factors influencing enzyme action.   (15)

2. Explain the biological importance of Lecithin and
cholesterol.   (15)

SECTION B — (10 × 5 = 50 marks)

3. Write short notes on :

(a) Endoplasmic reticulum.

(b) Osasone formation of glucose.

(c) Classification of carbohydrates.

(d) Biological importance of proteins.

(e) Saponification of oils and fats.

(f) Co—enzymes.

(g) Maintenance of pH of blood.

(h) Various types of amino acids.

(i) Ribonucleic acids.

(j) Polypeptides.

2   [KJ 872]

[KL 872]   **Sub. Code : 5002**

B.Sc. (Medical Laboratory Technology) DEGREE
EXAMINATION.

First Year

Paper II — BASIC CHEMISTRY

Time : Three hours   Maximum : 100 marks

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

Sec. C : Twenty minutes   Sec. 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)

1.   What are fats and oils? What is their importance
to the living system? Describe any two colour reactions
of cholesterol.   (5 + 5 + 5)

2.   What are polypeptides? Discuss any one method of
their synthesis. Describe the secondary structure of
proteins.   (15)

SECTION B — (10 × 5 = 50 marks)

3.   Write short notes on :

(a) Mitochondria.

(b) Mutarotation of glucose.

(c) Biological importance of steroids.

(d) Specificity of enzymes.

(e) Enzyme inhibition.

(f) Biological importance of cholesterol.

(g) Deoxy Ribonucleic acids.

(h) Classification of amino acids.

(i) Buffer solutions.

(j) Serum proteins.

[KN 872]   Sub. Code : 5002

B.Sc. (Medical Laboratory Technology) DEGREE
EXAMINATION.

First Year

Paper II — BASIC CHEMISTRY

Time : Three hours   Maximum : 100 marks

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

Sec. C : Twenty minutes   Sec. C : 20 marks

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

Answer Section C in the answer sheet provided.

Answer ALL questions.

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

1.   What are proteins? How are they classified? Give
examples.

2.   Explain the structure of DNA.

SECTION B — $(10 \times 5 = 50$ marks$)$

3.   Write short notes on :

(a)   Classification of carbohydrates

(b)   Buffer systems in blood

(c)   Insulin

(d)   Denaturation of proteins

(e)   Importance of essential fatty acids

(f)   Factors influencing enzyme action

(g)   Biological significance of fats

(h)   Zwitter ions and isoelectric pH

(i)   Biotin

(j)   Hydrolytic products of proteins

[KP 872]   **Sub. Code : 5002**

B.Sc. (Medical Laboratory Technology) DEGREE
EXAMINATION.

First Year

Paper II — BASIC CHEMISTRY

Time : Three hours   Maximum : 100 marks

Descriptive : Two hours and   Descriptive : 80 marks
        forty minutes

Objective : Twenty minutes   Objective : 20 marks

Answer ALL questions.

Write Essays on :

1.   Describe the structure and functions of (a) cell membrane (b) Nucleus (c) Mitochondria. Add a note on MRNA and t.RNA.   (20)

2.   (a) Discuss the classification of carbohydrates with examples.

     (b) Explain any two qualitative tests for identification of carbohydrates.

     (c) Bring out the biological importance of carbohydrates.   (5 + 5 + 5 = 15)

3.   (a) What is a peptide linkage? Explain with an example.

     (b) Write any two colour tests for proteins.

     (c) Discuss the biological importance of proteins.

                                   (5 + 5 + 5 = 15)

4.   Write short notes on :   (6 × 5 = 30)

     (a) Organelles.

     (b) Factors affecting enzyme reaction.

     (c) Oils and fats.

     (d) pH and its biological importance.

     (e) Lewis concept of acids and bases.

     (f) Aromatic compounds of physiological importance.

[KR 872]   **Sub. Code : 5002**

B.Sc. (Medical Laboratory Technology) DEGREE
EXAMINATION.

First Year

Paper II — BASIC CHEMISTRY

Time : Three hours   Maximum : 100 marks

Descriptive : Two hours and   Descriptive :   80 marks
       forty minutes

Objective : Twenty minutes   Objective :   20 marks

Answer ALL questions.

I.   Essay :

(1)   What are nucleic acids? Explain. Write any
five uses of proteins. What are the factors which
influence enzyme activity?   (5 + 5 + 5 = 15)

(2)   How are aminoacids classified? Write a note
on coenzymes. Define nucleotides and nucleosides.
                                    (5 + 5 + 5 = 15)

II.   Write Short Notes on: (10 × 5 = 50)

(a)   Aliphatic compounds of physiological
importance

(b)   Different kinds of R.N.A.

(c)   Mutarotation

(d)   Fibrous proteins

(e)   Iodine number

(f)   Dissociation of weak acids

(g)   Henderson equation

(h)   Classification of lipids

(i)   Classification of enzymes

(j)   Uses of ATP.

[KT 872]   **Sub. Code : 5002**

B.Sc. (Medical Laboratory Technology) DEGREE
EXAMINATION.

First Year

Paper II — BASIC CHEMISTRY

Q.P. Code : 725002

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

I.   Essays :   (2 × 15 = 30)

1.   What are buffer solutions? How do they act? When
does buffer capacity of a buffer become maximum?
Derive an expression relating the pH of a buffer with
the concentration of its components.   (2 + 3 + 5 + 5)

2.   Discuss the primary, secondary and tertiary
structure of proteins.   (5 + 5 + 5)

II.   Write short notes on :   (10 × 5 = 50)

1.   Nucleotides and Nucleosides.

2.   Classification of carbohydrates.

3. The differences between glucose and fructose.

4. Synthesis of α-amino acids.

5. Replication of DNA.

6. Enzyme inhibition.

7. Factors influencing enzyme activity.

8. Biological importance of proteins.

9. Phospholipids.

10. Types of RNA and their functions.

III. Short answers questions :   (10 × 2 = 20)

1. Mention any four aliphatic compounds of physiological importance.

2. Mention two differences between an animal cell and a plant cell.

3. What does a nucleus of a cell consist of?

4. Write any two functions of lipids.

5. Mention any two unsaturated fatty acids.

6. Explain what is meant by essential fatty acids.

7. Describe any two functions of proteins.

8. Mention any four nonessential aminoacids. Why are these called as nonessential aminoacids?

9. What are the bases present in nucleic acids?

10. Define enzymes. Cite two examples of enzymes.

_____

B.Sc. (Medical Laboratory Technology) DEGREE EXAMINATION

FIRST YEAR
Paper II – BASIC CHEMISTRY

Q.P. Code : 725002

Time : Three hours   **Maximum : 100 marks**

Answer All questions.

I. Essays :   (2X15=30)

1. What is an indicator? Explain its function giving two examples. Why does the colour depend upon P^H? What indicator should be used in i) Titration of H2SO4 with Na2Co3 and ii) Acetic acid with NaOH.   (2+3+5+5)

2. What are nucleic acids? Discuss the structure of DNA. What is meant by replications of DNA?   (5+5+5)

II. Write Short Notes on :   (10X 5=50)
   1. Buffer solution.
   2. Mutarotation of glucose.
   3. Biological importance of carbohydrates.
   4. Classification of proteins.
   5. Two colour reactions of cholesterol.
   6. N-terminal analysis of proteins.
   7. α - helix structure of protein.
   8. Any one coenzyme and its functions.
   9. Specificity of enzymes.
   10. Mode of action of enzymes.

III. Short Answer Questions: (10X2 = 20)
   1. Define Lewis concept of acids and bases.
   2. What are intracellular materials present in the animal cell?
   3. What is golgi apparatus? Mentions two functions.
   4. What is mitochondrion?
   5. What are the classifications of carbohydrates?
   6. What is meant by racemic modification?
   7. Write any four types of lipids.
   8. What is the sugar residue present in RNA?
   9. How can you distinguish ketohexoses for aldohexoses?
   10. What is the use of Ninhydrin test?

******

B.Sc. (MEDICAL LABORATORY TECHNOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time : Three Hours   **Maximum : 100 marks**

Answer ALL questions

I. Essays: **(2 x 15 = 30)**

1. Discuss general and physical characteristics of proteins. Write any two chemical properties of proteins.
2. Describe the biological importance of enzymes and coenzymes.

II. Write Short notes on: **(10 x 5 = 50)**

1. Glycogen.
2. Classification of lipids.
3. Importance of carbohydrates.
4. Iodine value.
5. Nucleic acids.
6. Peptides.
7. pH and its importance in physiology.
8. Buffers.
9. Steroids.
10. Fructose.

III. Short Answers on: **(10 x 3 = 30)**

1. Composition of cell membrane.
2. Ribosomes.
3. Millon's test reagent.
4. Power house of cell.
5. Essential amino acids.
6. Storage of glucose in cells.
7. Ozone reaction.
8. Erichrome Black - T
9. Muta rotation.
10. Zwitter Ion.

****

B.Sc. (MEDICAL LABORATORY TECHNOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time : Three Hours   **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Discuss about the classification of proteins based on their shapes, complexity and biological function?

2. Explain the fundamental role of nucleic acids in life process?

3. Describe any three basic analytical technique?

II. Write notes on: **(8 x 5 = 40)**

1. Explain the induced fit & lock and key model of enzymes?

2. Write down the biological importance of carbohydrates?

3. What are water soluble vitamins?

4. Distinguish between DNA and RNA?

5. How will you estimate the concentration of proteins by Biuret method?

6. Give an account on the general properties of lipids?

7. Write a notes on: a) pH   b) Buffer   c) Indicators.

8. Classify lipoproteins?

III. Short Answers on: **(10 x 3 = 30)**

1. Define respiratory quotient?

2. Write down the role of vitamin D in our body?

3. What are sulfur containing aminoacids?

4. What is glycosidic linkage? Example.

5. What is the difference between fats and oils?

6. Define holoenzymes?

7. Explain Benedict's test?

8. What is meant by sphingomyelin?

9. Write a note purine and pyrimidine base?

10. Give a short notes on acids and bases?

****

B.Sc. (MEDICAL LABORATORY TECHNOLOGY) DEGREE EXAMINATION
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time : Three Hours   **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

 1. Describe the structure of glucose?

 2. Give a detailed notes on the chemistry and biological functions of vitamin 'A'.

 3. Classify lipids with suitable example?

II. Write notes on: **(8 x 5 = 40)**

 1. What are the factors affecting enzyme activity?

 2. Write down the role of lipids in the diet?

 3. Explain the general properties of proteins?

 4. Discuss about the principle of partition chromatography?

 5. Illustrate Watson and Crick double helical structure of DNA.

 6. How will determine the pH of a solution?

 7. What are isoenzymes and coenzymes?

 8. Write a note on the classification of carbohydrates?

III. Short Answers on: **(10 x 3 = 30)**

 1. Mention the aromatic amino acids with structure?

 2. What are optical isomers?

 3. Define basal metabolic rate?

 4. What is the difference between nucleotide and nucleoside?

 5. What are trace elements?

 6. Define Isoelectric pH?

 7. Write a note on emulsification?

 8. What is meant by optimum temperature?

 9. Give the symptoms of Marasmus?

10. What is called invert sugar?

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – Basic Chemistry
Q.P. Code : 725002

Time : Three hours   Maximum : 100 marks
   (180 Mins)   Answer All questions in the same order.

I. Elaborate on:

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. The classification of lipids and major steroid hormones.	7	20	10
2. The enzyme classification and nomenclature.	7	20	10
3. The classifications of protein and their general properties.	7	20	10

II .Write notes on:

1. Co-enzymes.	4	10	5
2. Reducing property of carbohydrates.	4	10	5
3. Replication of DNA.	4	10	5
4. Formation of Nucleotide.	4	10	5
5. Determination of the strength of acids.	4	10	5
6. Biological value of protein.	4	10	5
7. Chemical properties of carbohydrates.	4	10	5
8. Biological role of trace elements.	4	10	5

III .Short answers on:

1. How the concentration of bi-carbonate can be determined?	2	4	3
2. Write a note on acids and bases.	2	4	3
3. Write a note on the isometric forms of glucose and fructose.	2	4	3
4. Describe the denaturation of protein.	2	4	3
5. Write a note on enzymes as catalysts.	2	4	3
6. Describe the structure of DNA.	2	4	3
7. Write a note on Liebermann Burchard reaction.	2	4	3
8. Explain nitrogen balance.	2	4	3
9. Give example of fibrous water soluble and water insoluble globular proteins.	2	4	3
10. What is called Beer's and Lambert's Law?	2	4	3

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – Basic Chemistry
Q.P. Code : 725002

Time : Three hours   **Maximum : 100 marks**
Answer ALL questions.

I. Elaborate on: (3 X 10 = 30)

1. What are Lipids? How are they classified ? Mention their important properties ?
2. Define enzymes. How are they classified? Mention the clinically important enzymes.
3. Write a short notes on structure of Nucleic Acids ?

II .Write Notes on: (8 X 5 = 40)

1. Write about the classification of Carbohydrates ?
2. Define i) Oil ii) Fats
3. Write a short notes on secondary structure of Proteins?
4. Write down the Biological importance of Phospholipids and Steroids ?
5. Write about the Serum Proteins?
6. Explain Calorimetry.
7. List out the name of the Essential fatty acids. Explain it.
8. Write about nucleosides and nucleotides ?

III. Short Answers on: (10 X 3 = 30)

1. Mention the biological importance of carbohydrates.
2. Explain Biotin.
3. Mention the names of trace elements.
4. Define Specific Dynamic Action ?
5. What is meant by Electrophoresis?
6. Explain Peptide linkage
7. Mention any 3 unsaturated fatty acids.
8. What is meant by Biuret Test ?
9. What is meant by Essential Fatty acids?
10. What is meant by Saponification Test?

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

Paper II – BASIC CHEMISTRY

Q.P. Code : **725002**

Time: Three hours   **Maximum: 100 Marks**

Answer all questions

I. Elaborate on :   **(3 X 10 = 30)**

1. Define Oils and Fats ? How are Lipids classified ? ? Mention the biological importance of Phospholipids ?

2. Write a short notes on i) Chemical properties of Carbohydrates ? ii) Water soluble Vitamins ?

3. Explain the structure of DNA with neat diagram.

II. Write Notes on :   **(8 X 5 = 40)**

1. List out the name of the Co-Enzymes. Explain any one of the Co-Enzyme.

2. How will you classify the amino acids ? Give an example for each.

3. Write down the biological importance of Steroids ?

4. Write a short notes on Enzyme Inhibition ?

5. Explain the structure of Protein.

6. What about the hydrolytic products of Proteins ?

7. Define i) Zwitter ions ii) Iso electric P^H

8. Give a short notes on trace elements.

III. Short Answers on :   **(10 X 3 = 30)**

1. Name out any 4 Reducing sugars.

2. Which one is called Good Cholesterol ? Why?

3. Write about the base pairs of DNA and RNA ?

4. Name out the Fat soluble Vitamins . Mention its Deficiency.

5. Write any 2 colour tests for Cholesterol ?

6. Write about uses of ATP ?

7. Mention the factors affecting enzyme reactions ?

8. Write about theNon- Essential Amino acids ? Why are they called Non-Essential Aminoacids ?

9. What is meant by Ninhydrin Test ?

10. Write about the Protein Deficiency Diseases .

***

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
Paper II – BASIC CHEMISTRY
Q.P. Code : 725002

Time: Three hours　　　　　　　　　　　　　**Maximum: 100 Marks**

Answer all questions

I. Elaborate on :　　　　　　　　　　　　　　　**(3 X 10 = 30)**

1. Describe the structure and function of three biochemically important disaccharides.
2. Write an account on the various factors affecting enzyme activity.
3. Describe the classification of amino acids along with their structure.

II. Write Notes on :　　　　　　　　　　　　　　**(8 X 5 = 40)**

1. Describe the structure of protein and explain its qualitative tests.
2. Define enzymes and write about their classification.
3. Explain briefly about mutarotation.
4. What are the different types and RNA and their functions?
5. Discuss about enzyme inhibition.
6. Write about functions of lipids.
7. What are nucleosides and nucleotides?
8. Discuss about the O-Toluidine method.

III. Short Answers on :　　　　　　　　　　　　**(10 X 3 = 30)**

1. What are aromatic aminoacids? Name some of the aromatic aminoacids.
2. Define isoelectric pH.
3. Name any three techniques related to molecular biology and their significance.
4. Write the difference between molarity and molality.
5. Write about Benedicts Test.
6. Define and classify Polysaccharides.
7. What are the major complex biomolecules of cells and their functions?
8. Define Saponification.
9. Write about the buffer system of blood and their uses.
10. What is heparin? Where is heparin used?

*****

[LF 0212]   **AUGUST 2014**   **Sub.Code :5002**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three hours   **Maximum : 100 Marks**

Answer All questions

I. Elaborate on: **(3x10=30)**

1. Define carbohydrate and explain about biological importance of carbohydrate.
2. Structure of nucleic acid.
3. Classify enzyme

II. Write notes on: **(8x5=40)**

1. Caloric value of food stuff
2. Ionization of acid
3. Essential fatty acid
4. Partition chromatography
5. Nitrogen balance
6. Hydrogenation
7. Vitamin A
8. Classification of protein based on nutrition

III. Short answers on: **(10x3=30)**

1. Osmometry
2. Acid
3. Nucleic acid
4. Define oil
5. Sources of vitamin C
6. Steroid
7. Substrate
8. Nucleo protein
9. pH
10. Triacylglycerol

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours   **Maximum : 100 Marks**
Answer All questions

I. Elaborate on: **(3 x 10 = 30)**

1. Classify lipid.
2. Factors affecting enzyme action.
3. Biological importance of vitamins.

II. Write notes on: **(8 x 5 = 40)**

1. R.Q. of food stuffs.
2. Dissociation of water.
3. Essential amino acid.
4. Properties of lipid.
5. Dietary carbohydrates.
6. Titration using indicator.
7. Vitamin D.
8. Cholesterol.

III. Short answers on: **(10 x 3 = 30)**

1. Biological value of protein.
2. Base.
3. Active site.
4. Define fat.
5. Deficiency disorder of vitamin D.
6. Phospholipid.
7. Co enzyme.
8. Chromatography.
9. Buffer solution.
10. Vitamin.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
Paper II – BASIC CHEMISTRY
Q.P. Code: 725002

Time: Three Hours   **Maximum: 100 Marks**
Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Chemistry of carbohydrate.
2. Structure of nucleic acids.
3. Enzymes.

II. Write Notes on: **(8 x 5 = 40)**

1. Titration using indicators.
2. Biological importance of proteins.
3. Classifications of amino acids.
4. Biological importance of steroids.
5. Lipids.
6. Partition Chromatography.
7. Colour reactions of Carbohydrates.
8. Cholesterol.

III. Short Answers on: **(10 x 3 = 30)**

1. pH.
2. Lipoproteins.
3. Enzyme Inhibition.
4. Oils and Fats.
5. Calorific Value.
6. Dietary carbohydrates.
7. Mal nutrition.
8. Electrophoresis.
9. BCG methods.
10. Chemical tests for phosphate.

*****

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time : Three Hours   **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Properties, biological functions of phospholipids and steroids.
2. Chemistry and biological role of vitamins and trace elements.
3. Estimation of cholesterol and serum proteins.

II. Write Notes on: **(8 x 5 = 40)**

1. Theories of acids and bases.
2. Biological importance of carbohydrates.
3. Classifications of proteins.
4. RNA and their functions
5. Factors affecting enzyme reactions.
6. BMR and polypeptides.
7. Partition Chromatography.
8. Colour reactions of proteins.

III. Short Answers on: **(10 x 3 = 30)**

1. Buffer solutions.
2. Hydrolytic products of protein.
3. Classification of lipids.
4. Benedict's test
5. Co Enzymes.
6. Essential fatty acids.
7. Nitrogen balance.
8. Electrophoresis.
9. Cholesterol oxidase method.
10. Cysteine.

******

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours   **Maximum: 100 Marks**
Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Classification of proteins based on their physical properties.
2. Water soluble Vitamins.
3. Explain the structure and function of RNA.

II. Write notes on: **(8 x 5 = 40)**

1. Purines.
2. Biological significance of fats.
3. Classification of Lipids.
4. Oils and fats.
5. Vitamin deficiency.
6. Co enzymes.
7. Carbohydrates.
8. Albumin by BCG method.

III. Short answers on: **(10 x 3 = 30)**

1. Saturated fatty acids.
2. DNA.
3. Glucose.
4. Test for carbonate.
5. Lipo protein.
6. Essential and Non essential Amino acids.
7. Calorific value.
8. Partition chromatography.
9. Nitrogen balance.
10. Fiber.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours   **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Classify Carbohydrates, giving example for each class.
2. Explain the molecular structure of DNA.
3. Enumerate the Physico – Chemical properties of Amino acids.

II. Write notes on: **(8 x 5 = 40)**

1. Lipo proteins.
2. Steroids.
3. Nitrogen Balance.
4. Vitamins.
5. Electrophoresis.
6. Cholesterol.
7. Cystein.
8. Fructose.

III. Short answers on: **(10 x 3 = 30)**

1. Molisch Test.
2. Non Essential Amino acids.
3. Oils and Fats.
4. Nucleosides.
5. Enzymes.
6. Calorific value.
7. Protein Energy.
8. Carbonate Test.
9. Isoelectric Point.
10. Prosthetic group.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours　　　　　　　　　　　　**Maximum: 100 Marks**
Answer all questions

I. Elaborate on:　　　　　　　　　　　　　　**(3 x 10 = 30)**

1. Classification of protein with suitable examples.
2. Describe the structure and function of nucleotides.
3. Define and classify carbohydrates.

II. Write notes on:　　　　　　　　　　　　　**(8 x 5 = 40)**

1. Role of coenzyme in enzyme action.
2. Saturated and unsaturated fatty acids.
3. Cholesterol by CHOD POD method.
4. Sources and deficiency of Vitamin A.
5. Structure of DNA.
6. Lipo proteins.
7. Enzyme specificity.
8. Essential and nonessential amino acids.

III. Short answers on:　　　　　　　　　　　**(10 x 3 = 30)**

1. Poly saccharides.
2. Benedict's test.
3. Calorific value.
4. Fatty acids.
5. Ninhydrine test.
6. Metalloprotein.
7. Fats.
8. Enzymes.
9. Chromatography.
10. RNA.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours **Maximum: 100 Marks**
Answer all questions

I. Elaborate on: (3 x 10 = 30)

1. Classification of enzymes with suitable examples.
2. The theory of calorimetry.
3. Chemical properties and biological importance of carbohydrates.

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

1. Classifications of lipoproteins.
2. Biological importance of phospholipids and steroids.
3. Electrophoresis.
4. Biologically important nucleotides.
5. Factors affecting enzyme reactions.
6. Hydrolytic products of proteins.
7. Classification of carbohydrates.
8. Methods of determine pH.

III. Short answers on: (10 x 3 = 30)

1. Calorific value.
2. Essential fatty acids.
3. Osmometry.
4. BMR.
5. Vitamins
6. Indicator.
7. Oils.
8. Fiber.
9. Triglycerides.
10. Essential amino acids.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours   **Maximum: 100 Marks**
Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Write an account of classification of lipids with suitable example.
2. Describe the structure of DNA.
3. Write an account of various factors affecting enzyme action.

II. Write notes on: **(8 x 5 = 40)**

1. Biological significances of vitamins.
2. Coenzymes.
3. Write note on Vitamin C.
4. Protein estimation by Biuret method.
5. Chargaff's rule.
6. Function and classification of proteins.
7. Cholesterol.
8. Ozasone formation.

III. Short answers on: **(10 x 3 = 30)**

1. Glycoprotein.
2. Epimers.
3. Chromatography.
4. Iodine number.
5. Purines.
6. Phospholipids.
7. Glycogenic amino acids.
8. Denaturation.
9. RNA.
10. Oxidoreducatase.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours   **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Define enzymes. Describe the factors affecting enzyme action.
2. Explain the structure of DNA with neat diagram.
3. Define carbohydrates. Describe the structure and functions of Homopolysaccharides

II. Write notes on: **(8 x 5 = 40)**

1. Mention the biological importance of carbohydrates.
2. Write a note on serum proteins.
3. Phospholipids.
4. Partition chromatography.
5. Biological role of trace elements.
6. Write short notes on (1) pH (2) Buffer solutions (3) Indicators.
7. Explain about different types of RNA and their function.
8. Define vitamins. Add a note on functions and deficiency of Vitamin A.

III. Short answers on: **(10 x 3 = 30)**

1. Molisch's Test.
2. Lipoproteins.
3. Steroids.
4. Explain basal metabolic rate.
5. Active site.
6. Define isoelectric pH.
7. Biuret Test.
8. Define Fats and Oils.
9. Malnutrition.
10. Muta rotation.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours   **Maximum: 100 Marks**
                              Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Classification of carbohydrates and write on glucose metabolism.
2. Define Vitamins. Give an account on source, physiological role and deficiency of water soluble vitamins.
3. Explain the theory of calorimetry.

II. Write notes on: **(8 x 5 = 40)**

1. Classification of carbohydrates.
2. Biological importance of phospholipids.
3. Write about nucleosides and nucleotides.
4. Explain induced fit and lock and key model of enzymes.
5. Write about the properties of amino acids.
6. Titration using indicators.
7. Calorific value of food stuff.
8. Albumin by BCG method.

III. Short answers on: **(10 x 3 = 30)**

1. Sterio isomerism.
2. Buffer solution.
3. Functional proteins.
4. Electrophoresis.
5. Poly unsaturated fatty acids (PUFA).
6. Define specific dynamic action.
7. Coenzymes.
8. Essential amino acids.
9. Explain about invert sugar.
10. Explain nitrogen balance.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER II – BASIC CHEMISTRY

Q.P. Code: 725002

Time: Three Hours   **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Define enzymes. Write about the classification of enzymes with suitable examples.
2. Describe any three basic analytical techniques.
3. Explain in detail about phospholipids and their biological importance.

II. Write notes on: **(8 x 5 = 40)**

1. Heteropolysaccharides.
2. Hydrolytic products of protein.
3. Cholesterol and its biological importance.
4. Write short notes on enzyme specificity.
5. Distinguish between DNA and RNA.
6. Write about protein energy malnutrition.
7. Explain the theory of calorimetry.
8. Chemistry, biological role and deficiency of vitamin D.

III. Short answers on: **(10 x 3 = 30)**

1. Glycogen.
2. pH.
3. Saponifiation test.
4. Coenzymes.
5. Nucleotides.
6. Calorific value.
7. Zwitter ion.
8. Define vitamins and their classification.
9. Ninhydrin test.
10. Give the symptoms of marasmus.

****

[AHS 0321]   **MARCH 2021**   **Sub. Code: 5002**
(AUGUST 2020 EXAM SESSION)
B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (From 2010-2011 onwards)
PAPER II – BASIC CHEMISTRY
Q.P. Code : 725002

Time: Three hours   Answer ALL Questions   Maximum: 100 Marks

I. Elaborate on: **(3 x 10 = 30)**

1. Discuss about the classification of proteins based on their shape, chemical nature and biological function.
2. Define Enzymes. Give an account on clinical importance of enzymes.
3. Describe any three basic analytical techniques.

II. Write notes on: **(8 x 5 = 40)**

1. Lipoproteins.
2. Homopolysaccharides.
3. Protein energy malnutrition.
4. Structure of DNA.
5. General properties of lipids.
6. Trace elements.
7. Dissociation of water.
8. Biological importance of phospholipids and steroids.

III. Short answers on: **(10 x 3 = 30)**

1. Name any four reducing sugars.
2. Heparin and its use.
3. Deficiency disorder of Vitamin D.
4. Nucleoprotein.
5. Molarity and Molality.
6. Chemical tests for phosphate.
7. Acids and bases.
8. Fiber.
9. Ribosomes.
10. Buffer systems of blood and their uses.

****

[AHS 0422]   **APRIL 2022**   **Sub. Code: 5002**
(FEBRUARY 2021 & AUGUST 2021 EXAM SESSIONS)
B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (From 2010-2011 onwards)
PAPER II – BASIC CHEMISTRY
Q.P. Code: 725002

Time: Three Hours   **Maximum : 100 Marks**
Answer All questions

I.   Elaborate on :   **(3X10=30)**

1. What is an Enzyme? Explain the role of enzyme as catalyst.
2. Write in detail about the structure and biological importance of proteins.
3. What is a buffer solution? What are the factors involved in maintenance of pH in blood?

II.   Write Notes on :   **(8X5=40)**

1. Trace elements.
2. Water soluble vitamins.
3. Estimation of proteins.
4. Sphingomyelin.
5. Emulsification.
6. Biotin.
7. Partition Chromatography.
8. Ozone reaction.

III.   Short Answers on :   **(10X3=30)**

1. Golgi apparatus.
2. Peptide.
3. Mutarotation.
4. Name 3 Aliphatic compounds of physiological importance.
5. Name 3 Unsaturated fatty acids.
6. Nucleotides.
7. Benedict's test.
8. Niacin.
9. Zwitter ion.
10. Invert sugar.

*****

[AHS 1122]   **NOVEMBER 2022**   **Sub. Code: 5002**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (Regulation 2010-2011)
PAPER II – BASIC CHEMISTRY
Q.P. Code: 725002

Time: Three Hours   **Maximum : 100 Marks**
Answer All questions

I.   Elaborate on: **(3X10=30)**

1. Classify Carbohydrates. Write about the properties and biological importance of Carbohydrates.
2. Define Enzyme. Write a note on factors affecting enzyme activity.
3. Write about sources, requirement, functions and deficiency manifestations of Calcium.

II.   Write Notes on: **(8X5=40)**

1. Functions and importance of Phospholipids.
2. Vitamin K – sources and functions.
3. Dietary fiber.
4. Wald's Visual Cycle.
5. Define isomerism. Mention the types of isomerism with examples.
6. Biological importance of proteins.
7. Essential fatty acids.
8. Define pH and write about buffers.

III. Short Answers on: **(10X3=30)**

1. Mention the biologically important nucleotides.
2. Define co-enzyme with examples.
3. Basal Metabolic Rate (BMR).
4. Difference between animal and plant cells.
5. Name three aromatic compounds of physiological importance.
6. Iodine value.
7. Specific dynamic action.
8. Name three enzyme inhibitors.
9. mRNA.
10. Peptide linkage.

****

[AHS 0423]   **APRIL 2023**   **Sub. Code: 5002**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER II – BASIC CHEMISTRY
Q. P. Code: 725002

Time: Three hours   **Maximum : 100 Marks**

Answer ALL Questions

I. Elaborate on: **(3 x 10 = 30)**

1. Write in detail about   (i)   Classification of Carbohydrates
                            (ii) Functions of Carbohydrates
                            (iii) Chemical properties of Carbohydrates.

2. Enumerate the classification and physicochemical properties of Aminoacids.

3. Write in detail about   (i) Classification of Enzymes
                            (ii) Factors affecting Enzyme Activity.

II. Write notes on: **(8 x 5 = 40)**

1. Biologically important nucleotides.
2. Functions and deficiency manifestation of Vitamin D.
3. Protein energy malnutrition.
4. Dietary fibres.
5. Vitamin C.
6. Distinguish between DNA and RNA.
7. Biological importance of Phospholipids.
8. Functions and deficiency manifestations of Thiamine.

III. Short answers on: **(10 x 3 = 30)**

1. Pellagra.
2. What are Nucleosides and Nucleotides?
3. Specific dynamic action.
4. Define Acid and Base.
5. Isoelectric pH.
6. Ribosomes.
7. Define Respiratory Quotient.
8. Buffer system of blood and their uses.
9. Nitrogen balance.
10. Co-enzymes.

****

B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER II – BASIC CHEMISTRY
Q. P. Code: 725002

Time: Three Hours   Maximum : 100 Marks

Answer All questions

I. Elaborate on :   **(3 X 10 = 30)**

1. What are Trace elements? Write in detail about the chemistry and biological functions of Vitamin A.

2. Classify Lipids. Write in detail structure, functions and biological importance of Lipids.

3. Classify Aminoacids. Add a note on functions of Protein.

II. Write Notes on :   **(8 X 5 = 40)**

1. Enzyme inhibitors.
2. Denaturation of proteins.
3. Structure and functions of Insulin.
4. Define pH. What is Henderson equation?
5. tRNA – structure and function.
6. Lewis concept of acid and base.
7. Sources, requirement and functions of Thiamine.
8. Nitrogen balance.

III. Short Answers on :   **(10 X 3 = 30)**

1. Structure of DNA.
2. Nucleosides.
3. Isoelectric pH.
4. Give three examples for enzymes.
5. Arachidonic acid.
6. Give three examples for Indicators.
7. Specific dynamic action.
8. Biological importance of Phospholipids.
9. Holoenzymes.
10. Rancidity of fats.

****