APRIL 2001

[KD 880] Sub. Code : 5032

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

Third Year

Paper II — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Classify Jaundice. Describe the Liver function tests based on bile pigment metabolism. (25)

2. What is meant by acid base balance in the body? Describe the role of Lungs and Kidneys in maintaining the blood pH. (25)

3. Write short notes on : (5 x 10 = 50)

(a) Creatinine clearance.

(b) Isoenzymes.

(c) Lipid profile.

(d) Stone analysis.

(e) Diagnostic Kits.

APRIL 2003

[KI 880] **Sub. Code : 5032**

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

Third Year

Paper II — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Enumerate the Liver function tests. Write about the formation of bilirubin. Discuss the biochemical findings of different types of jaundice in blood and urine. (25)

2. Describe the clinical significance of various enzyme assays useful in malignancies. (25)

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

   (a) Blood buffers.

   (b) Role of kidney in acid base balance.

   (c) Estimation of fibrinogen and its significance.

   (d) Diagnostic kits for estimation of blood glucose.

   (e) Lipid profile.

AUGUST 2004

[KL 880] **Sub. Code : 5032**

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

Third Year

Paper II — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

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

SECTION A — (2 × 15 = 30 marks)

1. Describe in detail about the maintenance of acid base balance in the body. (15)

2. Describe in detail about the metabolism of bile pigments. Mention the normal bilirubin level. How are the different types of Jaundice diagnosed Biochemically? (15)

SECTION B — (10 × 5 = 50 marks)

3. Write short notes on :

(a) Serum Uric acid.

(b) Albumin Globulin Ratio.

(c) Alkalosis.

(d) Serum enzymes in myocardial infarction

(e) Lipid profile.

(f) Clinical importance of gastric analysis.

(g) Isoenzymes.

(h) Creatinine Clearance Test.

(i) Detoxification Mechanisms.

(j) Galactose Tolerance Test.

FEBRUARY 2005

[KM 880] **Sub. Code : 5032**

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

Third Year

Paper II — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

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

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 × 15 = 30 marks)

1. Discuss the Liver Function tests. What are the Biochemical findings in Obstructive jaundice? (15)

2. Classify Enzymes. Add a note on the clinical significance of Enzymes. (15)

SECTION B — (10 × 5 = 50 marks)

3. Write short notes on the following :

a) Fibrinogen

b) Creatinine Clearance

c) Metabolic Alkalosis

d) Composition of Saliva

e) Specific Dynamic action

f) Van den bergh Test

g) Anticoagulants

h) Identification of Ketone bodies in urine

i) Serum Creatine phospho kinase

j) Proteinuria.

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AUGUST 2005

[KN 880] **Sub. Code : 5032**

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

Third Year

Paper II — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

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

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 × 15 = 30 marks)

1. What is normal pH of blood? Write in detail about the renal mechanism by which HCO_3^- is reclaimed and regained. (15)

2. Define enzyme. Discuss the clinical significance of various enzymes assay of the cardiac, liver and pancreatic diseases. (15)

SECTION B — (10 × 5 = 50 marks)

3. Write short notes on :

(a) Vandenbergh's reaction and its interpretation.

(b) Anion gap.

(c) Metabolic acidosis.

(d) Normal level of uric acid and its significance.

(e) Diagnostic kits for glucose estimation.

(f) Unconjucated hyperbilirubinemia.

(g) Enzymes of prostatic carcinoma.

(h) Creatinine clearence test.

(i) Glucose tolerance test.

(j) HDLC and LDLC.

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MARCH 2006

[KO 880] **Sub. Code : 5032**

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

Third Year

Paper II — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

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

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 × 15 = 30 marks)

1. What are Renal Function tests? Describe the principle and method for measuring creatinine clearance and its significance. (15)

2. Give an account of automation in clinical laboratories describing the types and advantages. (15)

SECTION B — (10 × 5 = 50 marks)

3. Write short notes on the following :

(a) Serum Amylase

(b) Hemolytic jaundice

(c) GOD-POD kit

(d) Anion Gap

(e) HDL

(f) Isoenzymes

(g) Biologic value of protein

(h) Kwashiorkor

(i) Beer Lambert's law

(j) Hippuric acid test.

AUGUST 2006

[KP 880] **Sub. Code : 5032**

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

Third Year

Paper II — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Descriptive : Two hours and forty minutes Descriptive : 80 marks

Objective : Twenty minutes Objective : 20 marks

Answer ALL questions.

1. Give the clinical significance of measurement of the following enzymes in serum.

   (a) Amylase

   (b) Alkaline phosphatase

   (c) Acid phosphatase

   (d) Alanine amino transferase. (20)

2. Discuss the Bilirubin metabolism. Which investigations are required to diagnose the different types of Jaundice? (15)

3. Write in detail about Glucose tolerance tests. (15)

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

   (a) Cardiac enzyme profile.

   (b) Gout.

   (c) Chromatography.

   (d) Constituents of cerebrospinal fluid.

   (e) Plasma Proteins.

   (f) Phenyl ketonuria.

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AUGUST 2007

[KR 880] **Sub. Code : 5032**

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

Third Year

Paper II — BIOCHEMISTRY — II

Time : Three hours Maximum : 100 marks

Descriptive : Two hours and forty minutes Descriptive : 80 marks

Objective : Twenty minutes Objective : 20 marks

Answer ALL questions.

I. Essay questions : (2 × 15 = 30)

(1) Discuss the Renal Function Tests. Write briefly about Blood urea estimation and urea clearance.

(2) Describe the factors affecting enzyme activity. Add a note on diagnostic enzymes.

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

(a) Respiratory Acidosis

(b) Precipitation of proteins

(c) Cholesterol

(d) Biological value of food substances

(e) Serum transaminases

(f) Coenzymes

(g) Biochemical investigations of a patient with Jaundice

(h) Electrophoresis

(i) Haematuria

(j) Prothrombin time.

August-2008

[KT 880] **Sub. Code : 5032**

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

Third Year

Paper II — BIOCHEMISTRY — II

Q.P. Code : 725032

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Essays : (2 × 15 = 30)

1. Describe five important enzymes which serve as an important index in the diagnosis of disease condition in clinical practice. (15)

2. Enumerate important liver function tests based on the metabolic functions of the liver. (15)

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

1. Haemoglobin Buffer System.

2. Uric acid.

3. Renal clearance test.

4. Auto analysers.

5. Toxic substances in Food stuff.

6. Water balance in the body.

7. HDL – Cholesterol.

8. Jaundice.

9. Handerson – Hasselbalch equation.

10. Oxygen debt.

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

1. What is the normal serum total and direct bilirubin?

2. Name the bile pigments.

3. What is the normal serum prothrombin time?

4. Name the enzymes which are altered in liver function.

5. Name the buffer systems in our body.

6. What is anion gap? What is the normal level?

7. What is clearance? What are the types of clearance tests?

8. Name two markers to detect carcinoma prostate.

9. Name the enzymes which are increased in myocardial infarction.

10. What is fibrinogen and what is the normal level?

August - 2009

[KV 880] Sub. Code: 5032

B.Sc. (Medical Laboratory Technology) DEGREE EXAMINATION

THIRD YEAR

Paper II – BIOCHEMISTRY - II

Q.P. Code : 725032

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

Answer All questions.

I. Essays : **(2X15=30)**

1. Explain kidney function tests in detail.

2. Discuss the biological importance of lipids.

II. Write Short Notes on : **(10X5=50)**

1. Vandenberg – Tests.
2. Colori meters.
3. Liver function enzymes.
4. Metabolic acidosis.
5. Bicarbonate buffer.
6. Fibrinogen.
7. Composition of food stuffs.
8. Abnormalities of gastric function.
9. Co-Enzymes.
10. Diagnostic kits.

III. Short Answer Questions: **(10X2=20)**

1. Name the bile pigments. Explain the principle of Fouchets test.
2. Name two types of automated machines.
3. Name the inherited hyperbilrubinemias.
4. Name the different types of acid base disturbances.
5. What are buffers? Name two important buffers of plasma.
6. What is metabolic acidosis? Name any two pathological conditions which lead to metabolic acidosis.
7. What is chloride shift?
8. What are the tests for tubular function? What is the total urine output of creatinine perday.
9. Mention two conditions in which alkaline phosphatase level in serum is elevated.
10. Two enzymes useful as tumor markers.

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August 2010

[KX 880] **Sub. Code: 5032**

B.Sc. (Medical Laboratory Technology) DEGREE EXAMINATION

THIRD YEAR
Paper II – BIOCHEMISTRY - II
Q.P. Code : 725032

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

Answer All questions.

I. Essays : **(2X15=30)**

1. Enumerate and discuss the factors affecting enzyme activity. Add a note on Isoenzymes.

2. Discuss about various liver function tests.

II. Write Short Notes on : **(10X5=50)**

1. Renal glycosuria.
2. Determination of uric acid.
3. GFR.
4. Urea clearance tests.
5. Respiratory alkalosis.
6. Extra hepatic circulation of bile pigments.
7. Bohr effect.
8. Protein purification.
9. Gastric function tests.
10. Enzyme specificity.

III. Short Answer Questions: **(10X2=20)**

1. Galactose tolerance tests.
2. Creatine Kinase and Heart attack.
3. Biological value of proteins.
4. Water analysis.
5. Prothrombin time.
6. Heat coagulation test.
7. Jaundice.
8. Spectrophotometer.
9. HDL Cholesterol.
10. Principle and procedure for estimation of Serum uric acid.

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August 2011

[KZ 0811] **Sub. Code: 5032**

B.SC. MEDICAL LABORATORY TECHNOLOGY

DEGREE EXAMINATION

THIRD YEAR

PAPER II – BIOCHEMISTY II

Q.P. Code : 725032

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

Answer All Questions

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

1. PCR – concept, method and uses
2. Diagnostic importance of enzymes
3. Biochemistry of cancer

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

1. Enzymes in Liver diseases
2. Immunometric assay
3. DNA polymers
4. Fructose intolerance
5. DNA replication
6. Etiology of cancer
7. Nucleoprotein
8. Lipid profile

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

1. Tumor
2. Isozymes
3. Beta-2-microglobulin
4. Genetic code
5. Mutagens
6. ALP
7. Uric acid
8. Fibrinogen
9. Bile pigment
10. Immunoassay

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February 2012

[LA 0212] **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY DEGREE EXAMINATION

THIRD YEAR

PAPER II – BIOCHEMISTRY II

Q.P. Code : 725032

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

Answer All questions.

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

1. Translation, post-translational modifications and Genetic codes
2. Principle and methods of Automation
3. Estimation and interpretations of Liver enzymes and Cardiac markers

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

1. Principle of Electrolytes measurement
2. Prothrombin Time (PT) and Activated Partial Thromboplastin Time (APTT)
3. DNA repairing mechanisms
4. Restriction Endonucleases
5. Describe the various phases and events occurring during 'Cell cycle'
6. Principle and methods of RIA
7. Carcinogens and Oncogenes
8. Intestinal Function tests

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

1. Why Galactose Tolerance test is considered as Liver Function test? Explain
2. Identification of Benze-Jhons protein (BJP) and its significance
3. Measurement and Interpretation of Direct and Indirect Bilirubin
4. Determination of Microalbuminuria
5. Principle of serum Cholesterol estimation
6. Carcino Embryonic Antigen (CEA)
7. Write down the Genetic mutation of Galactosemia and Cystic fibrosis
8. Detection of urine Urobilinogen and Porphobilinogen
9. Fractional excretion of Sodium (FeNa)
10. Turbidimetry principle

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[LB 0212] **AUGUST 2012** **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY-II

Q.P. Code : 725032

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. Explain in detail about Transcription.	7	20	10
2. Give an Account on Competitive immuno assay.	7	20	10
3. Elaborate Operon Hypothesis.	7	20	10
II. Write notes on:			
1. Give an account on lesch nyhan syndrome.	4	10	5
2. Write notes on gastric function test.	4	10	5
3. Write notes on Genetic code.	4	10	5
4. Write notes on enzymes of Myocardial infarction.	4	10	5
5. Write about inhibitors of protein synthesis.	4	10	5
6. Give an account on Significance of recombinant technology.	4	10	5
7. Write notes on renal regulation blood pH.	4	10	5
8. Draw the structure and explain about DNA.	4	10	5
III. Short notes on:			
1. Anion gap.	2	4	3
2. Diagnostic test to detect AIDS.	2	4	3
3. Zwellger syndrome.	2	4	3
4. Codons.	2	4	3
5. Fructose intolerance.	2	4	3
6. Bence jones proteins.	2	4	3
7. Nucleoproteins.	2	4	3
8. Enzyme.	2	4	3
9. Apoprotein.	2	4	3
10. Antibodies.	2	4	3

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[LC 0212] FEBRUARY 2013 Sub. Code: 5032

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY-II

Q.P. Code : 725032

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

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

1. Classify Jaundice? Give an account of the biochemical test that help differentiating the types of Jaundice.
2. Give detailed account of the transcription process
3. Elaborate Competitive immune assay.

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

1. DNA repair enzymes.
2. Lipoproteins.
3. Gastric function test.
4. Principle of Thyroid diagnostic kit.
5. Write about blood gas analysis.
6. Write about activation of protooncogene to oncogene.
7. Glycogen storage diseases.
8. Explain Genetic code.

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

1. What is metabolic acidosis?
2. What is base pairing rule?
3. What are okazaki fragment?
4. What are mutagen?
5. What is sports antidrop analysis?
6. Define Glomerular filtration rate
7. What is an antibodies?
8. Explain cystic fibrosis
9. What are plasmids
10. What is a Bence jones protein?

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[LD 0212] **AUGUST 2013** **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER II –BIOCHEMISTRY – II

Q.P. Code : **725032**

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

Answer All Questions

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

1. Explain the Renal function tests in detail.
2. Elaborate DNA structure and Transcription.
3. Elaborate about biochemistry of Cancer.

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

1. Brief on Auto analysers.
2. Importance of measuring Liver enzymes in clinical practice.
3. What is Respiratory alkalosis and explain with examples?
4. Principle behind Immuno turbidimetric assay.
5. Estimation of T. Bilirubin, D. Bilirubin and Indirect Bilirubin .
6. Brief about abnormalities of Gastric function.
7. Write about Enzyme Substrate reactions.
8. Write about PCR technique and its uses.

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

1. What is Anion gap? Write the normal value for Bicarbonate & anion gap?
2. Write about Spectrophotometer.
3. What is Physiological jaundice?
4. Write about Familial Hypercholesterolemia.
5. What is Chloride shift?
6. Brief about Beta HCG
7. Brief about GFR.
8. Estimation of Total protein, Albumin and ALP.
9. Significance of Western blot technique.
10. Write about Maple syrup urine disease (MSUD).

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[LF 0212] **AUGUST 2014** **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY - II

Q.P. Code : 725032

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

Answer All Questions

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

1. Explain Liver Function test.
2. Describe about Transcription.
3. Give an account on metabolism of lipoprotein.

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

1. Stucture of DNA.
2. Cell Cycle.
3. Operon hypothesis.
4. Inhibitors of Protein Synthesis.
5. Etiology of Cancer.
6. Basic methods of automation.
7. Genetic Code.
8. Cystic Fibrosis.

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

1. Multiple myeloma.
2. Fructose Intolerance.
3. Organic aciduria.
4. Galactosemia.
5. Mutagens.
6. Bile pigments.
7. Oncogene.
8. Lipoprotein.
9. Introns.
10. Automation.

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[LG 0215] **FEBRUARY 2015** **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY - II

Q.P. Code : 725032

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

Answer All Questions

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

1. Explain biosynthesis of Protein.
2. Give an account on Competitive immuno Assay.
3. Write notes on Enzymes of clinical Importance.

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

1. Immunometric assay.
2. Importance of recombinant DNA technology.
3. DNA Damage.
4. Replication.
5. Inborn Error Of metabolism.
6. Tumour markers.
7. Restriction Endonucleases.
8. Renal Function Test.

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

1. Bile Salt.
2. Genetic mutations.
3. Ryles Tube.
4. Exons.
5. Organic Aciduria.
6. Alpha Feta Protein.
7. Nucleoprotein.
8. Start Codon.
9. Mitochondrial RNA.
10. Anti Oncogene.

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[LH 0815] **AUGUST 2015** **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY - II

Q.P. Code: 725032

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

Answer all questions

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

1. What are the different mechanisms to regulate the blood pH? Explain any one in detail.
2. Describe at least 5 diagnostic enzymes and its clinical importance.
3. Describe the DNA replication and mention its inhibitors.

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

1. Principle and applications of autoanalyzer.
2. Gastric function tests.
3. Define genetic code. Discuss its properties.
4. Galactosemia- discuss on the defect, clinical features and diagnostic tests.
5. Describe the HDL metabolism.
6. Mention 5 tumor markers and its use.
7. Hemolytic jaundice-explain.
8. What are clearance tests? Explain urea clearance.

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

1. Cell cycle.
2. Anion gap-define and mention the normal value.
3. What is Van den bergh test and its significance?
4. Bence jones proteinuria.
5. What is organic aciduria? Give examples.
6. What is mRNA? Draw its structure.
7. Discuss kinetic analysis.
8. Name the bile pigments. Mention the name of the test to detect in urine.
9. Bicarbonate buffer.
10. What are introns?

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[LI 0216] FEBRUARY 2016 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY - II

Q.P. Code: 725032

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

Answer all questions

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

1. What is carcinogenesis? Explain in detail the causes and mechanism of cancer.
2. Explain the process of transcription. Brief about post transcriptional processing.
3. Write in detail how bilirubin is formed and excreted?

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

1. Structure and functions of tRNA.
2. Describe Lac operon.
3. Hyperbilirubinemia.
4. What are the renal tubular function tests?
5. DNA repair.
6. Metabolic acidosis.
7. Principle and applications of blood gas analyzer.
8. Describe the VLDL metabolism.

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

1. Endpoint analysis.
2. What is inborn error of metabolism? Give two examples.
3. What is Van den bergh test and its significance?
4. Mention the marker enzymes of liver diseases.
5. Discuss the Henderson Hasselbach equation.
6. Give the normal values of i) total bilirubin ii) conjugated bilirubin iii) unconjugated bilirubin.
7. Restriction enzymes.
8. What are oncogenes and protooncogenes?
9. Mention the inhibitors of protein synthesis.
10. Wobbling phenomenon of genetic code.

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[LJ 0816] AUGUST 2016 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER II – BIOCHEMISTRY – II

Q.P. Code: 725032

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

Answer all questions

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

1. Explain briefly about the protein biosynthesis.
2. State the clinically important enzymes and their uses.
3. Explain inborn errors with example.

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

1. Cell cycle - explain.
2. Structure of t-RNA.
3. What are the inhibitors of protein synthesis?
4. DNA replication.
5. Give notes on Cystic fibrosis.
6. Write the synthesis of bile salts.
7. What are amino acid disorders?
8. Alpha Feto protein.

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

1. What is good cholesterol? Why?
2. Write the estimation of urea.
3. What is GFR?
4. Mutation – give notes.
5. Write short notes on Beta -2- microglobulin.
6. What are called Mutagens?
7. Write examples of Repairing enzymes.
8. Post transcriptional modification.
9. Write the estimation of SGPT.
10. Chylomicron.

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[LK 0217] FEBRUARY 2017 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER II – BIOCHEMISTRY – II

Q.P. Code: 725032

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

Answer all questions

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

1. Write an essay on competitive immunoassay.
2. Write in detail about lipoprotein, types and their transport.
3. Explain about the recombinant DNA technology.

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

1. Write the synthesis of bile salts.
2. State the structure of DNA.
3. Give short notes on Bence jones proteins.
4. Blood gas analyzer.
5. Give an account on PSA.
6. What are Liver function tests? Explain.
7. What are the basic methods of automation?
8. Galactosemia.

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

1. What is SGOT?
2. Write the estimation of ALP.
3. GFR.
4. Give notes on Fructose intolerance.
5. What is Hypercholesterolemia?
6. State some inborn errors.
7. State about the action of DNA polymerase.
8. Multiple myeloma.
9. Write the estimation of bilirubin.
10. What are Exons?

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[LL 0817] AUGUST 2017 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER II – BIOCHEMISTRY – II

Q.P. Code: 725032

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

Answer all questions

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

1. The structure of Nucleosome and Deoxy-ribo Nucleic Acid (DNA). Explain with neat sketches, the different types of DNA. Add a small note on B-DNA.
2. The metabolism of Low density lipoprotein (LDL) and High Density Lipoprotein (HDL) with a neat labeled flowcharted sketch. Add a note on HDL cycle.
3. Different enzymes analyzed in Clinical Biochemistry, used as markers of various diseases.

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

1. Different parameters tested during Liver Function Tests (LFT).
2. Importance of alpha-feto protein and carcino-embryonic antigen (CEA) estimation in various tumors.
3. Recombinant DNA technology
4. Post transcriptional modification/processing.
5. Clinical significance of Bence-Jones Proteins.
6. Western blotting in Acquired Immune Deficiency Syndrome (AIDS).
7. Causes of and investigations to be done in Hereditary Fructose Intolerance.
8. Estimation of Cholesterol.

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

1. Cell cycle and its stages.
2. Chemical mutagens and their effects on human body.
3. Principle of Glucose estimation using kit method.
4. Metabolic acidosis.
5. Inhibitors of Protein Synthesis.
6. Operon (lac operon) hypothesis.
7. Significance of Vanillyl Mandelic acid (VMA) in diagnostics.
8. Principle of competitive immuno-assay.
9. Restriction Endonuclease.
10. Role of Transfer RNA (tRNA).

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[LM 0218] FEBRUARY 2018 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER II – BIOCHEMISTRY – II

Q.P. Code: 725032

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

Answer all questions

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

1. The detailed mechanism of Deoxy-ribo nucleic acid replication (DNA replication) with a neat labeled sketch emphasizing on the importance of the replication bubble.
2. Describe the fate and contents of bile and describe the various tests done as a part of Liver function tests.
3. The different levels of acid-base buffering and homeostasis. Add a special note on the causes and investigations in case of a metabolic acidosis.

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

1. Importance of tumor markers in Multiple Myeloma.
2. Repair mechanisms in DNA damage.
3. Principle of automation in biochemistry laboratory.
4. Cardiac biomarkers with special mention on Creatine Kinase-MB (CK-MB).
5. Formation of Cerebro-spinal fluid (CSF) and various contents of CSF.
6. Recombinant DNA technology.
7. Post translational modifications of Proteins.
8. Importance and the different tests done, as a part of Gastric function test.

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

1. Role of introns and exons in splicing.
2. Utility of Prostate specific antigen (PSA) as a tumor marker.
3. Principle of cholesterol estimation using kit methods.
4. Respiratory alkalosis.
5. Role of ribosomal RNA (rRNA) in translation.
6. Clinical features and investigations to be done in classical galactosemia.
7. Principles of therapeutic drug monitoring.
8. Immuno-turbidimetry in biochemistry laboratory.
9. High density lipoprotein cycle (HDL cycle).
10. Steps in Polymerase chain reaction (PCR).

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[LN 0818] AUGUST 2018 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER II – BIOCHEMISTRY – II

Q.P. Code: 725032

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

Answer all questions

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

1. The various steps involved in eukaryotic translation and the machinery involved in protein synthesis. Add a small note on post translational modifications.
2. Describe the significance and the various types of tests involved in 'renal function test' (RFT). Add a note on the effect of tests on pre-renal, renal and post renal types of renal failure.
3. The various "inborn errors of metabolism" with a special note on Galactosemia and Hereditary fructose intolerance.

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

1. Principle, short procedure and the clinical significance of estimation of calcium in biochemistry laboratory.
2. The technique and clinical applications of Southern blotting method.
3. Low density lipoprotein (LDL): chemistry, metabolism and its clinical significance.
4. Liver transaminases (Aspartate transaminase and Alanine transaminase) and Alkaline phosphatase in diseases.
5. Hallmark features of the genetic code and codon.
6. The biochemistry and investigations in Respiratory acidosis.
7. Splicing of mRNA.
8. Tumor markers of importance in biochemistry.

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

1. Competitive immunoassay.
2. Types and significance of various dyslipidemias with a special mention on familial hypercholesterolemia.
3. Principle of total bilirubin estimation using kit method.
4. Different phases in cell cycle.
5. Various Deoxy-ribo nucleic acid (DNA) repair mechanisms.
6. Technique and significance of Polymerase chain reaction (PCR).
7. Components of a usual Arterial Blood Gas (ABG) analysis report.
8. Role of histones in the structure of Deoxy-ribo nucleic acid (DNA).
9. Significance of urine protein estimation.
10. Beta 2-microglobulin and its clinical significance.

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[LO 0219] FEBRUARY 2019 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY – II

Q.P. Code: 725032

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

Answer all questions

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

1. Explain the process of protein synthesis.
2. Write in detail about the inborn errors of carbohydrate metabolism.
3. Discuss about the biochemistry of cancer.

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

1. Operon hypothesis.
2. Role of tumor markers in diagnosis.
3. Competitive immuno assay.
4. Van den bergh test and its significance.
5. Different mechanisms to regulate the blood pH.
6. Clearance tests.
7. Phenylketonuria.
8. Lipid storage diseases.

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

1. Bence jones proteins.
2. Fructose intolerance.
3. Restriction endo nucleases.
4. PCR.
5. Bicarbonate buffer.
6. Nucleotides.
7. Codon.
8. Beta 2-microglobulin.
9. Autoanalysers.
10. Fibrinogen.

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[LP 0819] AUGUST 2019 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY – II

Q.P. Code: 725032

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

Answer all questions

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

1. Discuss on the process of DNA replication.
2. What are the inborn errors of protein metabolism?
3. How will you perform liver function test?

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

1. Gastric function tests.
2. Genetic code.
3. Structure of RNA.
4. Post translational modifications.
5. High density lipoprotein metabolism and its clinical significance.
6. Etiology of cancer.
7. Galactosemia.
8. Estimation of protein.

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

1. Carcinogens.
2. Cystic fibrosis.
3. What are tumour markers? Give examples.
4. Southern blotting.
5. Urobilinogen.
6. Alpha feto protein.
7. Arterial Blood Gas analysis.
8. Glomerular filteration rate.
9. Alkaline phosphatase.
10. Bad cholesterol.

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[LQ 0220] FEBRUARY 2020 **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER II – BIOCHEMISTRY – II

Q.P. Code: 725032

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

Answer all questions

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

1. How will you perform renal function tests?
2. Explain the process of RNA transcription.
3. Write brief notes on the role of enzymes in diagnosis.

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

1. Acid base balance.
2. Diagnostic importance of transaminases.
3. Principles of automation.
4. Glycogen storage diseases.
5. Respiratory acidosis and alkalosis.
6. Recombinant DNA technology.
7. Jaundice.
8. Cardiac enzymes and their significance.

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

1. Tumor markers.
2. Introns and exons.
3. Cell cycle.
4. Inhibitors of protein synthesis.
5. Familial hypercholesterolemia.
6. Western blotting.
7. Deoxy-ribo nucleic acid repair mechanisms.
8. Good cholesterol.
9. Okasaki fragment.
10. Role of histones.

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

[LR 1220] DECEMBER 2020 Sub. Code: 5032
(AUGUST 2020 EXAM SESSION)

BACHELOR IN MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER II – BIOCHEMISTRY – II
Q.P. Code: 725032

Time: Three Hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. What are the different mechanisms to regulate the blood PH? Explain any one in detail.
2. Explain Liver Function Test.
3. Explain Biosynthesis of protein.

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

1. Explain Enzyme – Substrate (E-S) reactions.
2. Thyroid function Test using diagnostic kit.
3. Gastric function Test.
4. Estimation of glucose.
5. Genetic code.
6. Competitive Immuno assay.
7. Tumour markers.
8. Auto Analyser.

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

1. Exons.
2. Multiple myeloma.
3. Fructose intolerance.
4. End point analysis.
5. Discuss the Henderson Hasselbach equation.
6. Okasagi fragment.
7. Colorimeter.
8. Define Glomerular Filtration Rate (GFR).
9. Lipoproteins.
10. Structure of DNA.

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

[AHS 0122] JANUARY 2022 Sub. Code: 5032
(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR (Regulation from 2010-2011)
PAPER II – BIOCHEMISTRY – II
Q.P. Code: 725032

Time: Three Hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. List the investigations of LFT. Add a note on changes of LFT in Hepatic jaundice.
2. HDL metabolism.
3. List out the investigations of Renal function tests. Add a note on clearance tests.

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

1. Pancreatic enzymes.
2. ELISA.
3. DNA structure.
4. Tumour Markers.
5. Structure and functions of tRNA.
6. Uses of polymerase chain reaction.
7. Principle of turbidimetry. List out the parameters measured by it.
8. Enzymes used in diagnostics purposes or used in lab analysis.

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

1. Vandenberg test.
2. Name the parameters done in ABG analysis.
3. Name 3 causes of cancer.
4. Name 3 inhibitors of protein synthesis.
5. Types of RNA.
6. Draw the structure of LAC operon.
7. Alkaptonuria.
8. Principle of spectrophotometer.
9. Name 3 drugs in therapeutic drug monitoring.
10. Principle of glucose oxidase peroxidase method.

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

[AHS 0922] SEPTEMBER 2022 Sub. Code: 5032
(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR (Regulation from 2010-2011)
PAPER II – BIOCHEMISTRY – II
Q.P. Code: 725032

Time: Three Hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Write notes on Enzymes of clinical importance. Add a note on markers of various diseases.
2. Elaborate DNA structure and replication. Add a note on Recombinant DNA technology.
3. Explain Renal function tests in detail.

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

1. Structure of tRNA and its functions.
2. Galactosemia.
3. Gastric function tests.
4. Overview of Inborn errors of metabolism.
5. Describe Lac Operon.
6. Basic methods of automation.
7. Cell cycle.
8. Haemolytic jaundice.

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

1. Estimation of cholesterol.
2. Principle of Competitive Immunoassay.
3. Fructose Intolerance.
4. Mention inhibitors of protein synthesis.
5. Name the bile pigments. Mention the name of the test to detect in urine.
6. Introns.
7. What is Bence Jones protein?
8. Define pH. What is normal blood pH?
9. Oncogenes.
10. Good cholesterol.

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

[AHS 0423] **APRIL 2023** **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR - (Regulations 2010-2011 & 2018-2019 onwards)
PAPER II – BIOCHEMISTRY – II
Q.P. Code: 725032

Time: Three Hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Write in detail about Renal Function Tests.
2. Write in detail about DNA structure and Replication.
3. What is Jaundice? Differentiate the different types of Jaundice biochemically based on Liver Function Test.

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

1. Define Buffer and add note on different types of buffer.
2. Etiology of Cancer. Add a note carcinogens.
3. Principle and types of Immunoassay.
4. Disorders of Acid Base Balance with one example.
5. Formation of bilirubin.
6. Post translational modification.
7. Gastric function tests.
8. Structure and Types of RNA.

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

1. Name the bile salts and mention the functions of bile salts.
2. What is Genetic code?
3. Enzyme defect and any two biochemical features.
4. Bence Jones Protein.
5. Prostate specific antigen and its uses.
6. Enumerate any five enzymes of clinical importance.
7. Name the method for albumin estimation and formula for globulin calculation.
8. Principle of Uric acid test.
9. Uses of tumor markers with three examples.
10. Enumerate the types of lipoprotein.

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

[AHS 1123] **NOVEMBER 2023** **Sub. Code: 5032**

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR - (Regulations 2010-2011 & 2018-2019 onwards)
PAPER II – BIOCHEMISTRY – II
Q.P. Code: 725032

Time: Three Hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Write in detail about Renal Function Test.
2. Write about DNA Replication.
3. Discuss about the salient features of Cell cycle. Enumerate any five tumour markers along with their significance.

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

1. Types of Jaundice.
2. Gastric function test.
3. Mechanism of blood pH regulation.
4. Recombinant DNA technology.
5. Thyroid Function test.
6. Phenylketonuria.
7. Galactosemia.
8. Principles of Competitive Immunoassay.

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

1. Genetic code.
2. Fructose intolerance.
3. Buffers.
4. Acidosis.
5. Quality control.
6. Mutagens.
7. Good cholesterol.
8. Define pH. What is Henderson – Hasselbalch equation?
9. Bence Jones Protein.
10. Cystic fibrosis.

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