

[LH 0415]

OCTOBER 2015

Sub. Code: 1261

M.Sc. (MEDICAL LABORATORY TECHNOLOGY) DEGREE EXAMINATION

(From 2013-2014 Batch onwards)

SECOND YEAR

**PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY
AND NUTRITIONAL BIOCHEMISTRY**

Q.P. Code : 281261

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail about the diagnostic and therapeutic uses of enzymes.
2. Elaborate on Mechanism of action of hormones.

II. Write Notes on:

(10 x 6 = 60)

1. Lipoprotein(a).
2. Glycated hemoglobin.
3. Gut Hormones.
4. Principles, instrumentation and application of Chemiluminescence.
5. Tumour markers.
6. Biochemical functions of calcium.
7. Thyroid function tests.
8. Triple test.
9. Phenylketonuria.
10. Dietary fibres and its health benefits.

[LJ 1016]

OCTOBER 2016

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY EXAMS
SECOND YEAR
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Maximum: 100 Marks

I. Elaborate on: (2 x 20 = 40)

1. Describe in detail about classification, diagnostic criteria and complications of Diabetes Mellitus.
2. Elaborate on various Liver function tests.

II. Write notes on: (10 x 6 = 60)

1. Cardiac Troponins.
2. Vitamin D.
3. Serum electrophoresis.
4. Alkaptonuria.
5. Tumour markers.
6. Hormonal changes in menstrual cycle.
7. Screening for down syndrome.
8. Glomerular function tests.
9. Hypothyroidism.
10. Dietary fibres.

[LL 1017]

OCTOBER 2017

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY EXAMS
SECOND YEAR
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Maximum: 100 Marks

I. Elaborate on: (2 x 20 = 40)

1. Give a detailed account on various Liver Function Tests.
2. Explain different types of nutrients with its importance and add a note on nutritional disorders.

II. Write notes on: (10 x 6 = 60)

1. Role of hormones in the diagnosis of diseases.
2. Types of lipoproteins.
3. Protein energy malnutrition.
4. Second messengers.
5. Gonadal hormones.
6. Cardiac enzymes.
7. Renal diseases.
8. Qualitative tests for individual sugars in urine.
9. Lipid storage diseases.
10. Tumor markers.

[LN 1018]

OCTOBER 2018

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY EXAMS
SECOND YEAR
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 20 = 40)**

1. Discuss in detail the dietary sources, RDA, biochemical functions and deficiency manifestations of Vitamin B12.
2. Describe in detail the various renal function tests.

II. Write notes on: **(10 x 6 = 60)**

1. Glycated hemoglobin.
2. Tests to estimate the increased risk of cardiovascular disease.
3. Cerebrospinal fluid analysis.
4. Define Basal Metabolic Rate (BMR) and factors affecting BMR. .
5. Mention four tumour markers with their significance.
6. Electrophoresis of plasma proteins.
7. Tests to assess adrenal function.
8. Determination of Sodium & Potassium in blood.
9. Differentiate various types of jaundice using biochemical tests.
10. Mechanism of action of steroid hormones.

[LP 1019]

OCTOBER 2019

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY EXAMS
SECOND YEAR
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Maximum: 100 Marks

I. Elaborate on: (2 x 20 = 40)

1. Discuss in detail about various Thyroid Function Tests.
2. Explain the functions of Albumin and add a note on Electrophoresis of proteins.

II. Write notes on: (10 x 6 = 60)

1. Lipid profile.
2. Glucose tolerance test.
3. Second messengers.
4. Oncogenes.
5. Types of jaundice.
6. Alkaptonuria.
7. Iodine.
8. Isoenzymes.
9. Hormones of posterior pituitary.
10. Laboratory diagnosis of AIDS
(Acquired Immuno Deficiency Syndrome).

[LQ 1019]

NOVEMBER 2020

Sub. Code: 1261

(MAY 2020 EXAM SESSION)

M.Sc. MEDICAL LABORATORY TECHNOLOGY

SECOND YEAR

PAPER I

CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND NUTRITIONAL BIOCHEMISTRY

Q.P. code: 281261

Time: Three hours

Maximum: 100 marks

I. Elaborate on:

(2 x 20 = 40)

1. Define and classify Electrophoresis. Detail the steps and applications of Agar gel Electrophoresis.
2. Detail the dietary sources, RDA ,functions and deficiency manifestations of Vitamin-A.

II. Write notes on:

(10 x 6 = 60)

1. Lactose Intolerance.
2. Functions of Calcium.
3. Liver enzymes.
4. Deficiency manifestations of Vitamin D.
5. Sickle cell Anaemia.
6. Obesity.
7. Role of Lungs in maintaining Blood pH.
8. Proteinuria.
9. Thyroid profile.
10. Urine preservatives.

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

[AHS 0321]

MARCH 2021

Sub. Code: 1261

(OCTOBER 2020 EXAM SESSION)

M.Sc. MEDICAL LABORATORY TECHNOLOGY

SECOND YEAR (2011-2012 Regulation - From 2013-2014 onwards)

**PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND NUTRITIONAL
BIOCHEMISTRY**

Q.P. Code : 281261

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Enumerate the Liver Function Tests. Detail the Methodology for estimation of total Protein.
2. Describe the Mechanism of Hormones in Blood Glucose regulation during Starvation and Fed state.

II. Write notes on:

(10 x 6 = 60)

1. Hyperuricaemia.
2. Mutagens.
3. Lipid Profile.
4. Galactosemia.
5. Wilsons Disease.
6. Functions of Vitamin C
7. Phenylketonuria.
8. 24 hrs Urine Collection Technique.
9. Hypokalemia.
10. Pancreatic Function.

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

[AHS 0921]

**SEPTEMBER 2021
(MAY 2021 EXAM SESSION)**

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY
SECOND YEAR (2011-2012 Regulation - From 2013-2014 onwards)
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY
*Q.P. Code : 281261***

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Detail the Dietary sources, RDA, Functions and Deficiency manifestations of Vitamin-B1 (Thiamine).
2. Define and Classify types of Chromatography. Detail its Clinical applications and Describe any one of the Technique.

II. Write notes on:

(10 x 6 = 60)

1. Hemosiderosis.
2. Functions of Cholesterol.
3. Maple Syrup Urine Disease.
4. Hyperbilirubinaemia.
5. Functions of Vitamin B6 (Pyridoxine).
6. Hypocalcaemia.
7. Stone Analysis.
8. Diabeticketo-Acidosis.
9. Bence Jones Protein.
10. Hyperthyroidism.

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

[AHS 0122]

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

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY
SECOND YEAR (Regulation 2011-2012 & from 2013-2014 onwards)
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY
Q.P. Code : 281261**

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail about the Secretion, function and regulation of synthesis of Thyroid hormones.
2. Elaborate about dietary sources, functions, RDA and deficiency manifestations of Vitamin D.

II. Write notes on:

(10 x 6 = 60)

1. Cardiac enzyme markers.
2. Glycated Hemoglobin.
3. Gut Hormones.
4. Electrophoresis technique.
5. Tumour markers.
6. Glomerular filtration rate.
7. Blood buffers.
8. Phenylketonuria.
9. Marasmus.
10. Physiological Jaundice.

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

[AHS 0522]

MAY 2022

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY
SECOND YEAR (Regulation 2011-2012 & from 2013-2014 onwards)
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY
Q.P. Code : 281261**

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail about the diagnostic criteria, etiology and complications of type 2 diabetes mellitus.
2. Discuss in detail about various mechanism of action of hormones.

II. Write notes on:

(10 x 6 = 60)

1. Cardiac Troponins.
2. Glycated Hemoglobin.
3. Hormones of anterior pituitary gland.
4. Chemiluminescence.
5. Multiple myeloma.
6. Proteinuria.
7. Arterial blood gas analysis.
8. High sensitive C reactive protein.
9. Biochemical functions of Calcium.
10. Hepatic enzymes.

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

[AHS 1022]

OCTOBER 2022

Sub. Code: 1261

M.Sc. MEDICAL LABORATORY TECHNOLOGY

SECOND YEAR (Regulation 2011-2012)

(Candidates admitted from 2013-2014 & 2020-2021 onwards)

**PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code : 281261

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain different types of nutrients with its importance and add a note on nutritional disorders.
2. Define and classify Electrophoresis. Explain electrophoresis of plasma proteins in detail.

II. Write notes on:

(10 x 6 = 60)

1. Fertility Profile.
2. Tumor markers.
3. Hepatic enzymes.
4. Pancreatic Function Tests.
5. Regulation of gene expression by hormones.
6. Atherosclerosis.
7. Qualitative tests for individual sugars in Urine.
8. Hyperthyroidism.
9. Differentiate various types of Jaundice using Biochemical tests.
10. Multiple myeloma.

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

[AHS 0523]

MAY 2023

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY
SECOND YEAR**

(Candidates admitted from 2020-2021 onwards)

**PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Enumerate the Renal Function Tests. Write about the early markers of Renal Pathology.
2. Explain in detail about the Structure, Dietary Sources, Recommended Dietary Allowances, Functions and Deficiency Manifestations of Vitamin D.

II. Write notes on:

(10 x 6 = 60)

1. Biochemical analysis of Cerebrospinal Fluid.
2. Thyroid profile.
3. Cardiac enzymes.
4. Define Basal Metabolic Rate and Factors affecting BMR.
5. Second messengers.
6. Blood gas analysis.
7. Glycogen storage diseases.
8. Aminoaciduria.
9. Oncogenes.
10. Malabsorption syndrome.

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

[AHS 1023]

OCTOBER 2023

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail about various diagnostic enzymes in disease.
2. Explain in detail about the Structure, Dietary Sources, Recommended Dietary Allowances, Functions and Deficiency Manifestations of Vitamin C.

II. Write notes on:

(10 x 6 = 60)

1. Biochemical functions of Calcium.
2. Determination of Sodium and Potassium in blood.
3. Mechanism of action of steroid hormones.
4. Lipoproteins.
5. Gastric Function Tests.
6. Lipid storage diseases.
7. Tumor Markers.
8. Pituitary hormones.
9. Analysis of Amino acids.
10. Glycated haemoglobin.

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

[AHS 1024]

OCTOBER 2024

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2x20=40)

1. Describe the role of hormones in blood glucose regulation.
2. Explain about renal function tests.

II. Write notes on:

(10x6=60)

1. Isoenzymes – Definition and explain about any two isoenzymes and its clinical importance.
2. What are ketone bodies? How they are produced in the body? How will you test for ketone bodies in urine and add a note on conditions in which they are produced?
3. Explain the role of LDL in atherosclerosis.
4. Alkaptonuria.
5. Mechanism of action of steroid hormones.
6. Types of jaundice and the biochemical tests done to differentiate them.
7. Iron absorption and transport.
8. Biochemical functions, RDA and deficiency manifestations of Vitamin A.
9. Explain how calcium level is maintained in the body (calcium homeostasis).
10. Galactosemia.

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

[AHS 0525]

MAY 2025

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain in detail about the Structure, Dietary Sources, Recommended Dietary Allowances, Functions and Deficiency Manifestations of Vitamin D.
2. Discuss in detail about various mechanism of action of hormones.

II. Write Short notes on:

(10 x 6 = 60)

1. Cardiac Troponins.
2. Glycosylated Hemoglobin and its importance.
3. Chemiluminescence.
4. Marasmus.
5. Proteinuria.
6. Galactosemia.
7. Arterial blood gas analysis.
8. Biochemical functions of Vitamin B12.
9. Diagnostic enzymes in liver disease.
10. Explain in detail how creatinine clearance is done and add a note on urine collection?

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

[AHS 1025]

OCTOBER 2025

Sub. Code: 1261

**M.Sc. MEDICAL LABORATORY TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER I – CLINICAL BIOCHEMISTRY, ENDOCRINOLOGY AND
NUTRITIONAL BIOCHEMISTRY**

Q.P. Code: 281261

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail the dietary sources, RDA, biochemical functions and deficiency manifestations of vitamin B12.
2. Discuss in detail about liver function tests.

II. Write notes on:

(10 x 6 = 60)

1. Dietary fibre and its health benefits.
2. Lipid profile, the tests that are done under this profile with its normal value and how will you collect sample for lipid profile?
3. Tumor markers.
4. Second messengers.
5. Calcium homeostasis.
6. Electrophoretic pattern of serum proteins. Explain the pattern in normal and in disease conditions.
7. Lactose intolerance.
8. Thyroid profile.
9. How urine should be collected for creatinine clearance and how will you calculate creatinine clearance? Explain the formulae.
10. Enzymes and markers of importance to assess cardiac function.
