

[LD 1013]

OCTOBER 2013

Sub. Code: 1302

M.Sc. CLINICAL NUTRITION DEGREE EXAMINATION

FIRST YEAR

PAPER II – NUTRITIONAL BIO-CHEMISTRY

Q.P. Code: 281302

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Write a Brief note on Embden Meyer of Pathway & add a note on number of ATP molecules formed by the complete oxidation of one glucose molecule.
2. Give a detail account on Group I & Group II Hormones and their action.

II. Write notes on:

(10 x 6 = 60)

1. Write the details of any three Lipid Storage Diseases.
2. Classify Carbohydrates with examples.
3. Write down the formation of Urea from ammonia.
4. Brief note on macro & micro minerals and their sources, functions and requirements.
5. Hormonal regulation of blood glucose level. Explain?
6. Classify enzymes.
7. Brief note on Salvage Pathway for Purines.
8. Explain the Sources, functions, requirements & deficiency manifestations of Vitamin D
9. Explain the pathway of β -Oxidation of Fattyacids.
10. What are the functions of Proteins.

[LF 1014]

OCTOBER 2014

Sub. Code: 1302

M.Sc. CLINICAL NUTRITION DEGREE EXAMINATION

FIRST YEAR

(2012-2014 Batch onwards)

PAPER II – NUTRITIONAL BIO-CHEMISTRY

Q.P. Code: 281302

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Write a detailed note on the metabolism of glycogen.
2. Explain the sources, functions and deficiency symptoms of all B complex vitamins.

II. Write notes on:

(10 x 6 = 60)

1. Give the nomenclature and classification of enzymes.
2. Write a note on the reactions of glycolysis.
3. Classify proteins based on its composition.
4. What are antioxidants and free radicals?
5. Explain electron transport system.
6. What are the factors influencing enzyme activity?
7. Define hormone receptors and its types.
8. Explain monosaccharides with two examples.
9. What are the components of nucleic acids?
10. Explain the functions of macrominerals.

[LH 0415]

OCTOBER 2015

Sub. Code: 1302

M.Sc., CLINICAL NUTRITION
(from 2012-2014 onwards)
FIRST YEAR
PAPER II – NUTRITIONAL BIOCHEMISTRY

Q.P. Code : 281302

Time : Three hours

Maximum : 100 marks

I. Elaborate on :

(2 x 20 = 40)

1. Discuss in details about the mechanism of Glycogen
2. Explain about Dietary sources, Biochemical functions, Recommended daily allowance and deficiency manifestations of Vitamin A.

II. Write notes on:

(10 x 6 = 60)

1. Bile salts –Biochemical role
2. Deficiency manifestation of vitamin D
3. Sick cell anaemia
4. Nutritional importance of proteins
5. Factors affecting enzyme activity
6. Gout
7. Explain Monosaccharides with two examples
8. Electron transport chain
9. Antioxidants
10. Biochemical functions of calcium.

[LJ 1016]

OCTOBER 2016

Sub. Code: 1302

**M.Sc. CLINICAL NUTRITION EXAMS
FIRST YEAR
PAPER II – NUTRITIONAL BIOCHEMISTRY**

Q.P. Code : 281302

Time : Three hours

Maximum : 100 Marks

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

1. Explain about dietary sources, biochemical functions, recommended daily allowance and deficiency manifestations of Vitamin C.
2. Write detail about Glycolysis. Why the Krebs cycle known as “Final common pathway of metabolism”? Explain.

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

1. Homopolysaccharides.
2. Phospholipids.
3. Biochemically important peptides.
4. Factors affecting enzyme activity.
5. Regulation of blood glucose level.
6. Oxidative phosphorylation.
7. Salvage pathway of purines.
8. Describe beta oxidation of fatty acid.
9. Antioxidant and free radicals.
10. Maple syrup urine disease.

[LK 0517]

MAY 2017

Sub. Code: 1302

**M.Sc. CLINICAL NUTRITION EXAMS
FIRST YEAR
PAPER II – NUTRITIONAL BIOCHEMISTRY**

Q.P. Code : 281302

Time : Three hours

Maximum : 100 Marks

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

1. Explain the role of enzymes in clinical diagnosis.
2. Discuss in detail about the digestion, absorption and transport of carbohydrates.

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

1. Disaccharides with two examples.
2. Nutritional importance of proteins.
3. Disorder of lipid metabolism.
4. Role of vitamin C in our body.
5. Classify minerals.
6. Components of electron transport chain.
7. Glycogenesis pathway.
8. Salvage pathway of purine nucleotides.
9. Factors regulating blood glucose level.
10. How many ATPs are formed by the oxidation of single glucose molecule?

[LL 1017]

OCTOBER 2017

Sub. Code: 1302

**M.Sc. CLINICAL NUTRITION EXAMS
FIRST YEAR
PAPER II – NUTRITIONAL BIOCHEMISTRY**

Q.P. Code : 281302

Time : Three hours

Maximum : 100 Marks

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

1. Explain the Inborn errors of protein metabolism.
2. Classify carbohydrates with example and add a note on its functions.

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

1. Sources and functions of Fat soluble vitamins.
2. Michaelis Menten equation.
3. Free radical in human pathology and disease.
4. Nutritional importance of proteins.
5. Beta oxidation of fatty acids.
6. Reactions of tri-carboxylic acid cycle.
7. Factors affecting enzyme activity.
8. Cell surface receptors and second messengers.
9. Differentiate IDDM and NIDDM.
10. Urea cycle.

[LN 1018]

OCTOBER 2018

Sub. Code: 1302

**M.Sc. CLINICAL NUTRITION EXAMS
FIRST YEAR
PAPER II – NUTRITIONAL BIOCHEMISTRY**

Q.P. Code : 281302

Time : Three hours

Maximum : 100 Marks

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

1. Classify enzymes and describe the factors affecting enzyme activity.
2. Discuss the various levels of protein structure with examples.

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

1. List the components of electron transport chain and their inhibitors.
2. Mention the functions of phospholipids and give two examples.
3. Brief on urea cycle disorders.
4. List the functions of Vitamin A.
5. Explain Calcium homeostasis.
6. Brief on Galactosemia.
7. List the natural and diet derived antioxidants.
8. What are the fates of cholesterol?
9. Describe the metabolic significance of Hexose Monophosphate Shunt Pathway.
10. What are anaplerotic reactions?

[LP 1019]

OCTOBER 2019

Sub. Code: 1302

**M.Sc. CLINICAL NUTRITION EXAMS
FIRST YEAR
PAPER II – NUTRITIONAL BIOCHEMISTRY**

Q.P. Code : 281302

Time : Three hours

Maximum : 100 Marks

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

1. Describe the regulation of blood glucose level. Add a note on glycosuria.
2. Classify amino acids based on structure, nutritional requirement and metabolic fate. Add a note on properties of amino acid.

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

1. Coenzymes.
2. Digestion of carbohydrates.
3. Write the components and complexes of electron transport chain.
4. Gluconeogenesis.
5. Hyperlipoproteinemias.
6. Salvage pathway of purine biosynthesis.
7. Deamination reaction.
8. Functions and deficiency manifestations of Vitamin D.
9. Sickle cell anaemia.
10. Biochemical functions of thyroid hormone.

[LQ 1019]

**NOVEMBER 2020
(MAY 2020 EXAM SESSION)**

Sub. Code: 1302

**M.Sc. CLINICAL NUTRITION
FIRST YEAR
PAPER II – NUTRITIONAL BIOCHEMISTRY**

Q.P. Code : 281302

Time : Three hours

Maximum : 100 Marks

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

1. Explain the Digestion and Absorption of Proteins.
2. Describe in detail the chemistry, sources, requirements, metabolic functions and deficiency manifestations of Vitamin C.

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

1. Reactions of Glycolysis.
2. Phospholipids.
3. Polysaccharides.
4. Essential Amino Acids.
5. Functions and deficiency manifestations of Vitamin A.
6. Enzyme Inhibition.
7. Lipoproteins.
8. Synthesis of specialized products formed from Aromatic Amino Acids.
9. Free Radicals.
10. Phenylketonuria.

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

[AHS 0321]

MARCH 2021

Sub. Code: 1302

(OCTOBER 2020 EXAM SESSION)

M.Sc. CLINICAL NUTRITION

FIRST YEAR (From 2012-2014 onwards)

PAPER II – NUTRITIONAL BIOCHEMISTRY

Q.P. Code : 281302

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss the dynamics of blood glucose homeostasis. What is the role of hormones in achieving this?
2. Discuss in detail about the structural organization of DNA. Add a note on its functions.

II. Write notes on:

(10 x 6 = 60)

1. Mitochondrial electron transport chain.
2. Glycosaminoglycons.
3. Functions of proteins.
4. Explain about the enzyme class and type of reaction catalysed.
5. Name the substrates for gluconeogenesis and trace the pathway of Gluconeogenesis from pyruvate to glucose.
6. Metabolic effects of insulin and glucagon.
7. Lecithin and cephalin.
8. Biochemical functions of zinc and selenium.
9. What are antioxidant vitamins. Explain.
10. Disorders of protein metabolism.

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

[AHS 0921]

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

Sub. Code: 1302

**M.Sc. CLINICAL NUTRITION
FIRST YEAR (From 2012-2014 onwards)
PAPER II – NUTRITIONAL BIOCHEMISTRY
*Q.P. Code : 281302***

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Write a detailed essay on the De novo synthesis of fatty acids.
2. Write an essay on the role of carbohydrates, lipids and proteins in human nutrition.

II. Write notes on:

(10 x 6 = 60)

1. Explain about adenosine triphosphate and its importance.
2. Role of vitamin D and calcium.
3. Difference between amylase and amylopectin.
4. Types of lipoproteins
5. How does the temperature and pH affects the enzyme activity.
6. Nutritional classification of amino acids.
7. Describe the hexose monophosphate shunt and add a note on its significance.
8. Classify minerals.
9. Phenyl ketonuria and lactose intolerance.
10. Glycogenolysis.

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

[AHS 0222]

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

Sub. Code: 1302

M.Sc. CLINICAL NUTRITION

FIRST YEAR

(Candidates admitted from 2012-2014 onwards - Paper II)

(Candidates admitted from 2020-2021 onwards - Paper III)

PAPER II & III – NUTRITIONAL BIOCHEMISTRY

Q.P. Code : 281302

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe how glucose is metabolized to pyruvate in the body.
2. Write the mechanism of action of hormones.

II. Write notes on:

(10 x 6 = 60)

1. Biological role of eicosanoids.
2. Explain the diversity of protein structure.
3. Explain nucleotide and its components.
4. Characteristics of an active site.
5. Detoxification of ammonia.
6. Absorption and transport of carbohydrates.
7. Purine salvage pathway.
8. Disorders of carbohydrate metabolism.
9. Disease caused by free radicals.
10. Diagnostic importance of transaminases.
