

B.Sc. CLINICAL NUTRITION
(New Syllabus 2018-2019)

FIRST YEAR

PAPER III – NUTRITIONAL BIOCHEMISTRY

Q.P. Code: 803003

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Discuss in detail about protein energy malnutrition.
2. Glycolysis add a note on its bio- energetics?
3. What is bilirubin? Explain the types of jaundice.

II. Write notes on:

(8 x 5 = 40)

1. Classification of proteins.
2. Factors affecting enzyme action.
3. Athero sclerosis.
4. Hypothyroidism.
5. Vitamin A deficiency diseases.
6. Role of water and electrolytes in the body.
7. Diabetes mellitus.
8. Clearance.

III. Short answers on:

(10 x 3 = 30)

1. Define energy unit.
2. IZO enzymes.
3. Essential fatty acids.
4. Saponification number.
5. Buffers.
6. Immunoglobulins.
7. Tumor markers.
8. Functions of carbohydrates.
9. Semi essential amino acids.
10. Beri beri.

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

[AHS 0321]

MARCH 2021

Sub. Code: 3003

(AUGUST 2020 EXAM SESSION)

B.Sc. CLINICAL NUTRITION

FIRST YEAR (Regulation 2018-2019)

PAPER III – NUTRITIONAL BIOCHEMISTRY

Q.P. Code : 803003

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Write in detail about Bombcalorimeter with diagram.
2. Define vitamins. Give a brief account on sources, requirement, functions and deficiency disorders of vitamins.
3. Cholesterol and its clinical significance.

II. Write notes on:

(8 x 5 = 40)

1. Classification of carbohydrates.
2. Urea cycle.
3. Essential and nonessential amino acids.
4. Classification of enzymes.
5. BMR, factors affecting BMR.
6. Mode of buffer action.
7. Glucose tolerance test.
8. Tumor markers.

III. Short answers on:

(10 x 3 = 30)

1. Balanced diet.
2. Complete proteins.
3. Bile pigments.
4. Enzyme inhibition.
5. Dehydration.
6. Addison's disease.
7. Immunoglobulin.
8. Glycolysis.
9. GFR.
10. Iodine number.

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[AHS 0422]

APRIL 2022

Sub. Code: 3003

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSIONS)

B.Sc. CLINICAL NUTRITION

FIRST YEAR (Regulations 2018-2019)

PAPER III – NUTRITIONAL BIOCHEMISTRY

Q.P NO. 803003

Time: Three Hours

Answer All questions

Maximum: 100 Marks

I. Elaborate on : (3X10=30)

1. Demonstrate the citric acid cycle and explain its significance.
2. Classify hormones and write its general mode of action.
3. Explain on liver functions and their assessment based on
a) Carbohydrate metabolism b) Lipid metabolism.

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

1. Define Basal Metabolic Rate. What are the factors affecting it?
2. Illustrate Glycolysis.
3. Write short notes on enzymes and their classification.
4. Write short notes on hormones of
a) Pituitary gland b) Thyroid gland c) Adrenal gland.
5. Brief about cholesterol and its clinical significance.
6. Explain the functions of immunoglobulins.
7. How does the body bring about the regulation of blood glucose levels?
8. Brief about the various hormonal disorder.

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

1. What is specific dynamic action of food?
2. List down the essential and non-essential amino acids.
3. What is a) Saponification number b) Acid number?
4. Write about pH and buffers.
5. Interpret the significance of:
a) Creatinine kinase b) Alkaline phosphatase c) Acid phosphatase.
6. Write about extracellular fluid and intracellular fluid.
7. What are the common clinical symptoms of Diabetes Mellitus?
8. What is Glomerular Filtration Rate?
9. List down the parts of male reproductive system.
10. Describe any three properties of enzymes.

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[AHS 1122]

NOVEMBER 2022

Sub. Code: 3003

**B.Sc. CLINICAL NUTRITION
FIRST YEAR (Regulation 2018-2019)
PAPER III – NUTRITIONAL BIOCHEMISTRY
Q.P NO. 803003**

Time: Three Hours

Answer All questions

Maximum: 100 Marks

I. Elaborate on :

(3X10=30)

1. Define Enzyme. Add a note on classification and factors affecting enzyme activity.
2. Write in detail on sources, requirements, deficiency disorders and biochemical functions of vitamin D.
3. Define Jaundice. Add a note on types of Jaundice and biochemical findings to differentiate the types of Jaundice.

II. Write Notes on :

(8X5=40)

1. Write about Protein Energy Malnutrition.
2. Explain in brief about glycogenolysis.
3. What are proteins and how are they classified?
4. Sources and functions of Thiamine.
5. Urea cycle.
6. Enzyme inhibition.
7. What is hypoglycaemia? What are its causes?
8. Describe the various renal function tests.

III. Short Answers on :

(10X3=30)

1. How is energy requirement calculated?
2. Define : i) Isoenzyme ii) co-enzyme.
3. What is a) Iodine number b) Saponification?
4. Define acidosis and alkalosis.
5. Wald's Visual cycle.
6. Balanced diet.
7. Brief about glucose tolerance test.
8. Define Specific dynamic action of food.
9. Scurvy.
10. Write any three properties of enzymes.

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[AHS 0423]

APRIL 2023

Sub. Code: 3003

B.Sc. CLINICAL NUTRITION
FIRST YEAR (Regulation 2018-2019 onwards)
PAPER III – NUTRITIONAL BIOCHEMISTRY
Q. P. Code: 803003

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

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

1. Discuss in detail about Protein Energy Malnutrition.
2. Explain in detail about Citric Acid Cycle.
3. What is Bilirubin? Explain the types of Jaundice.

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

1. Classification of Proteins.
2. Factors affecting enzyme action.
3. Significance of HMP shunt.
4. Hypothyroidism.
5. Vitamin A deficiency diseases.
6. Role of water and electrolytes in the body.
7. Glucose Tolerance Test.
8. Renal function Tests.

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

1. Basal Metabolic Rate.
2. Isoenzymes.
3. Essential Fatty Acids.
4. Saponification number.
5. Buffers.
6. Functions of Immunoglobulins.
7. Mention any three Tumour markers.
8. Functions of Carbohydrates.
9. Semi Essential Amino Acids.
10. Beriberi.

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[AHS 1123]

NOVEMBER 2023

Sub. Code: 3003

B.Sc. CLINICAL NUTRITION
FIRST YEAR (Regulation 2018-2019 onwards)
PAPER III – NUTRITIONAL BIOCHEMISTRY

Q.P. Code: 803003

Time: Three Hours

Answer All questions

Maximum: 100 Marks

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

1. Describe the Regulation of Blood Glucose Level.
2. Explain the steps involved in Urea Cycle.
3. Explain the Dietary Sources, Absorption, Recommended Daily Allowance and Deficiency Manifestations of Vitamin B12.

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

1. Protein Energy Malnutrition.
2. Properties of Fatty acids.
3. Factors affecting Enzyme activity.
4. Pathway of Glycogenolysis.
5. Deficiency manifestations of Vitamin D.
6. Explain Disaccharides with examples.
7. Conjugated proteins.
8. Functions of Thyroid hormones.

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

1. Balanced diet.
2. Coenzymes with suitable examples.
3. Define BMR and enumerate any two factors affecting BMR.
4. Define pH and what is the normal Blood pH?
5. Galactosemia-enzyme defect and clinical features.
6. Glomerular filtration rate and its importance.
7. Deficiency manifestations of Vitamin A.
8. Name any four functions of Lipids.
9. Name Bile salts and Bile pigments.
10. Specific dynamic action of Food.

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[AHS 0424]

APRIL 2024

Sub. Code: 3003

**B.Sc. CLINICAL NUTRITION
FIRST YEAR (Regulation 2018-2019 onwards)
PAPER III – NUTRITIONAL BIOCHEMISTRY
Q.P. Code: 803003**

Time: Three Hours

Answer All questions

Maximum: 100 Marks

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

1. Define Glycolysis. Explain the steps and Energetics of Glycolysis.
2. Explain about dietary sources, biochemical functions and recommended daily allowance and deficiency manifestations of Vitamin C.
3. Classify Amino acids based on structure, nutritional requirement and Metabolic fate with examples.

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

1. Factors affecting Basal Metabolic Rate.
2. Classify Monosaccharide with suitable examples.
3. Competitive enzyme inhibition.
4. Essential Fatty Acids.
5. Definition, types and clinical features of Diabetes Mellitus.
6. Significance of Hexose Monophosphate shunt pathway.
7. Deficiency manifestations of Thiamine.
8. What is normal pH. Add a note on Buffers.

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

1. Body Mass Index (BMI).
2. Enzyme profile in liver diseases.
3. Name the substrates for Gluconeogenesis.
4. Give examples of Anterior Pituitary hormones.
5. Scurvy.
6. Denaturation reaction of Proteins.
7. Name the different classes of Immunoglobulins.
8. Transamination reactions.
9. Functions of Parathyroid hormones.
10. Ketosis.

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

[AHS 1125]

NOVEMBER 2025

Sub. Code: 3003

**B.Sc. CLINICAL NUTRITION
FIRST YEAR (Regulation 2018-2019 onwards)
PAPER III – NUTRITIONAL BIOCHEMISTRY
Q.P. Code: 803003**

Time: Three Hours

Answer All questions

Maximum: 100 Marks

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

1. Discuss in detail about Protein Energy Malnutrition.
2. Regulation of Blood glucose.
3. Explain the diagnostic importance and value of serum enzymes.

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

1. Functions of proteins.
2. Measurement of energy value of food.
3. B-oxidation of fatty acids.
4. Factors affecting enzyme action.
5. Water Soluble Vitamins.
6. Dietary management of diabetes mellitus.
7. Vanden Bergh's reaction.
8. Immunoglobulins.

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

1. SDA (Specific Dynamic Action).
2. Significance of HMP pathway.
3. Lipoproteins.
4. Semi Essential Aminoacids.
5. Buffers.
6. Immunoglobulins.
7. Rickets.
8. Dehydration.
9. Creatine clearance.
10. Tumor markers.
