[MBBS 0221] FEBRUARY 2021 **Sub.Code :6055**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: Three hours **Maximum: 100 Marks (80 Theory + 20MCQs)**

Answer All Questions

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

1. Describe the structure of biological membranes. Discuss the various transport mechanisms across membranes with suitable examples.
2. How are dietary lipids digested and absorbed? Write about the transport of lipids in plasma.

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

1. Competitive inhibition of enzyme activity.
2. Biochemical features seen in blood and urine of a patient with hemolytic anemia.
3. Functions of Vitamin – C
4. Anaplerotic role of citric acid cycle.
5. Define Gluconeogenesis and explain the various steps.
6. Formation and fate of Pyruvate.
7. Biological value of Proteins.
8. Enumerate the compounds derived from cholesterol and mention their biochemical functions.
9. Synthesis and regulation of Porphyrins.
10. Structure and functions of Mitochondria.

[MBBS 0821] AUGUST 2021 **Sub.Code :6055**

MAY 2021 SUPPLEMENTRY

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: Three hours **Maximum : 100 Marks (80 Theory + 20MCQs)**

Answer All Questions

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

1. Explain the mode of action of Enzymes and describe the factors affecting Enzyme activity? Brief the analytical uses of enzymes with example.
2. Describe the reactions of Kreb's Cycle and its regulation? Add a note on its anaplerotic role.

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

1. Fluid mosaic model of cell.
2. State the differences between
   a) Starch and Glycogen.
   b) Dextrin and Dextran.
3. Beta oxidation of Palmitic acid.
4. Mention the recommended dietary allowance, biochemical functions and deficiency manifestations of Vitamin – E
5. Chemiosmotic theory and mechanism of ATP synthesis
6. Brief the risk factors of cardiovascular disease and its preventive methods
7. What is Nitrogen balance? Enumerate the factors affecting nitrogen balance
8. List the inborn errors associated with heme metabolism and their features.
9. Oral Glucose Tolerance Test: Indications, Method and Interpretation.
10. Regulation and significance of HMP shunt.

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

[MBBS 0222] FEBRUARY 2022 **Sub.Code : 6055**

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2019-2020)
FIRST YEAR
PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: Three hours **Maximum : 100 Marks (80 Theory + 20MCQS)**

Answer All Questions

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

1. Describe the sources, biochemical functions, normal requirement and deficiency manifestations of vitamin D.

2. Classify lipoproteins. Explain their biological significance.

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

1. Glycated Hemoglobin.
2. Michaelis Constant (Km).
3. Glycogen storage diseases.
4. Acute intermittent porphyria.
5. Inhibitors of ETC.
6. Significance of HMP shunt pathway.
7. Protein energy malnutrition.
8. Glucose Transporters.
9. Pyridoxine.
10. Poly unsaturated fatty acids.

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

[MBBS 0522] **MAY 2022** **Sub. Code : 6055**

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER I – BIOCHEMISTRY

Q.P. Code: 526055

Time: Three hours **Maximum : 100 Marks (80 Theory + 20MCQs)**

Answer All Questions

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

1. What is the normal fasting glucose level? How is it regulated?

2. Write an essay on fatty acid oxidation and add a note on disorders associate with it.

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

1. Antioxidants.
2. Basal Metabolic Rate.
3. Suicide Inhibition.
4. Lactate dehydrogenase.
5. Glucuronic acid pathway.
6. Thalassemias.
7. Folic acid.
8. LDL – Cholesterol.
9. Inhibitors of TCA Cycle.
10. PUFAs (Polyunsaturated fatty acids) .

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

[MBBS 0123] **JANUARY 2023** **Sub. Code : 6055**

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR –(CBME)
PAPER I – BIOCHEMISTRY
Q.P. Code: 526055

Time: Three hours **Maximum : 100 Marks (80 Theory + 20MCQs)**

Answer All Questions

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

1. A four year old girl was brought to the OPD for not being able to walk properly. O/E she had bowed legs, thick wrists and dental caries. Her weight (8 kgs) and height (72.5cm) were below third percentile for her age. X-Ray shows cupping and widening of metaphyseal end of bone, poor bone mineralization.
   - Lab investigations showed:

   Serum Calcium – 8.5 mg/dL, Serum phosphorous – 3.0 mg/dL, Serum Alkaline phosphatase – 924 U/L, Serum 25-OH Vitamin D – 12 ng /mL.
   a) What is your provisional diagnosis?
   b) Write the daily requirement and sources of the deficient nutrient in the above condition and its main functions.
   c) Write in detail about its deficiency manifestations in children and adults.
   d) What are the causes of this disease?

2. Explain the steps of beta oxidation of Palmitic acid and its Energetics. Add a note on alpha and beta oxidation disorders.

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

1. Diagnostic criteria for diabetes mellitus and laboratory investigation in Diabetes mellitus.
2. Molecular basis and clinical features of Sickle cell anemia and Thalasemias.
3. Passive Transport Mechanisms.
4. A 4 month old child was brought with the history of vomiting, feeding difficulties and Failure to thrive along with developmental delay. The child was born at full term by normal delivery (birth weight 3 kg) and exclusively breast fed. The child also had suffered from severe and prolonged neonatal jaundice. The child now weighs 4 kg. O/E. He had hepatomegaly with bilateral cataract.
   a) What is your diagnosis?
   b) What is the Biochemical defect?
   c) What is the Biochemical test for reducing sugars?
   d) What are the non-carbohydrate reducing substances in urine?
   e) What is the treatment for this disease?
5. Metabolism of LDL with clinical importance.
6. Protein energy malnutrition.
7. Functions of prostaglandins.
8. Glycogen storage disorders.
9. Classify enzymes with examples.
10. Write short notes on Metabolic syndrome.

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