

QP CODE: 211020

Reg. No: .....

**Second Year B.Sc Medical Biochemistry Degree Supplementary Examinations  
August 2025**

**Paper VI - Metabolism 1**

**(Carbohydrate, Lipid & Amino Acid Metabolism)**

**(2016 Scheme)**

**Time: 3 hrs**

**Max Marks: 100**

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers*
- *Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

**Long Essays**

**(2x15=30)**

1. Explain the steps of beta oxidation of palmitic acid (C16 fatty acid) and its energetics. Add a note on peroxisomal beta oxidation
2. Define gluconeogenesis. Name the key enzymes of gluconeogenesis and write the steps involved in the formation of glucose from lactate. Give the importance of this pathway during starvation

**Short Essays**

**(2x10=20)**

3. Discuss the biologically important compounds formed from Glycine
4. Differentiate oxidative and substrate level phosphorylation with examples

**Short Answer**

**(6x5=30)**

5. Trace the reactions of histidine metabolism
6. Fatty acid synthase complex
7. Enzymes in protein digestion
8. Significance of glucuronic acid pathway
9. Biochemical symptoms and enzyme defect in lactose intolerance
10. Glucose 6-phosphate dehydrogenase deficiency

**Comment on**

**(10x2=20)**

11. Active methionine
12. Ketosis
13. Defect in Maple syrup urine disease (MSUD)
14. Adenosine triphosphate (ATP) synthase
15. Name any two inhibitors of tricarboxylic acid (TCA) cycle
16. Ketogenic amino acids
17. Emulsification
18. Name any two blood cholesterol lowering drugs
19. Polyamines
20. Importance of polyunsaturated fatty acid (PUFA)

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