

**The West Bengal University of Health Sciences**  
**MBBS 1<sup>st</sup> Professional Examination (New Regulation), March 2021**

Subject: Biochemistry

Full Marks : 100

Paper : 1

Time : 3 hours

*Attempt all questions. The figures in the margin indicate full marks.*

1. a) ~~a)~~ Classify enzymes according to IUB with an example of each. Differentiate between the lock and key model and the induced fit model for enzyme catalysis. What factors effect enzyme activity . Briefly discuss different mechanism of enzyme inhibition. 6+3+2+4
- b) Describe the differences between the anaerobic and aerobic pathways of glycolysis. Explain how RBCs can continue glycolysis without any synthesis of ATP. Explain how the metabolic pathways of fructose and galactose are linked to the glycolytic pathway. 6+3+3+3
2. a) ~~a)~~ Write down the different levels of organization of protein. Write down the steps of heme degradation. 5+5
- b) ~~b)~~ Describe the reactions of transamination and oxidative deamination of amino acids in the body. What are the effects of hyperammonemia? 3+3+4
- c) ~~c)~~ Write down the steps of  $\beta$ - oxidation of fatty acid. Why defective  $\beta$ - oxidation may lead to hypoglycaemia. 6+4
3. Write a short notes on the following: 2x5
  - a) ~~a)~~ Role of a physician.
  - b) ~~b)~~ Bicarbonate buffer system
4. Explain the following statements: 5x4
  - a) Gout is precipitated by alcohol intake.
  - b) Phototherapy is better alternative than Phenobarbital in the treatment of Crigler-Najjar syndrome type I.
  - c) Cholesterol is essential for digestion of lipids.
  - d) TCA cycle is known as a amphibolic pathway.
  - e) Hemoglobin is supposed to have all four levels of protein structure.

P.T.O.