

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

**Subject: Biochemistry**

**Paper : I**

**Full Marks : 100**

**Time : 3 hours**

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

1. a) What is normal blood level of calcium ? What are the mechanisms by which calcium homeostasis is maintained ? Mention factors influencing calcium absorption. 2+8+5  
 b) What do you mean by Gluconeogenesis. Write down the steps of gluconeogenesis. How it is regulated ? 2+9+4
2. a) Describe the different mechanism by which pH of blood is maintained. Write a note on metabolic acidosis. 7+3  
 b) Classify lipids in human. Explain the role of phospholipids and cholesterol in maintaining the structure and function of bio membranes. 2+8  
 c) What are the functions of haemoglobin ? How haemoglobin structure suits its function for oxygen transport ? 3+7
3. Write a short notes on the following: 2x5  
 a) What does it mean to be apatient from a doctor's view point.  
 b) Role of cytochrome P450 in Xenobiotic
4. Explain the following statements: 5x4  
 a) Allopurinol is used to treat gout.  
 b) Acetoacetate accounts for the net production of ketone bodies.  
 c) Uncontrolled diabetes mellitus cause cataract.  
 d) Intake of fish oil is good for health.  
 e) Endoplasmic reticulum is involved in detoxification process.
5. Choose the correct option for each of the following: 10x1  
 i) Which of the following is an uncouplar of the respiratory chain in human:  
 a) 2,4 dinitrophenyl phosphate  
 b) Rotenone  
 c) Cyanide  
 d) Carbon monoxide.  
 ii) The defective enzyme in black urine disease or alkaptonuria is:  
 a) Phenylalanine hydroxylase.  
 b) Homogentisate oxidase.  
 c) Tyrosine transaminase.  
 d) Tyrosine hydroxylase.

**P.T.O.**

- iii) The Co-enzyme for Methyl malonyl CoA mutase is:
- Biotin.
  - Adenosyl cobalamin.
  - CoA.
  - Tetrahydrofolate.
- iv) Ketone bodies are activated in peripheral tissues for utilization by:
- Thiolase.
  - Thiophorase.
  - Thiokinase.
  - Enolase.
- v) Following amino acid contributes its atoms to purine ring except:
- Glycine
  - Glutamine.
  - Aspartate.
  - Asparagine.
- vi) The second nitrogen donor for urea formation is:
- Glutamine.
  - Ammonia.
  - Aspartate.
  - Glutamate.
- vii) Which of the following substances normally fails to cross cell membranes under any circumstances?
- Water.
  - DNA.
  - Ethanol.
  - Fatty acid.
- viii) Features of galactosemia include the following except:
- Cataract.
  - Haemolytic anaemia.
  - Hepatosplenomegaly.
  - Mental retardation.
- ix) The highest phospholipids content is found in:
- Chylomicrons.
  - VLDL.
  - LDL.
  - HDL.
- x) The following compound is known as pseudopeptide :
- Oxytocin.
  - Glutathione.
  - Proinsulin.
  - Atrial natriuretic peptide.