CHUKA UNIVERSITY

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATIONS FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE (NURSING)

NURS 116: BIOCHEMISTRY II

STREAMS: BSC (NURS) Y1S2 **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY 15/4/2015 **2.30 P.M. – 4.30 P.M.**

INSTRUCTIONS:

- **Answer ALL questions in section A and any other TWO in section B**
- **Do not write on the question paper**

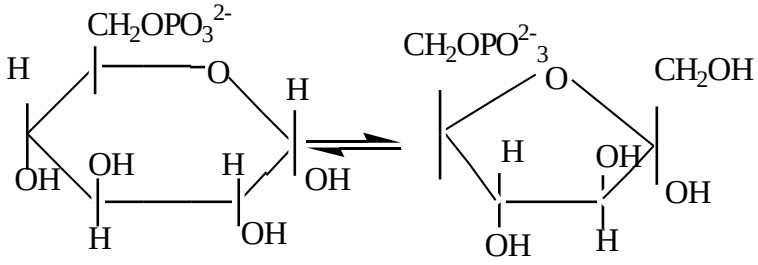
SECTION A (ANSWER ALL THE QUESTIONS)

1. (a) Explain the fate of glucose in biosynthetic reactions after its absorbed in the bloodstream. [4 marks]

   (b) Define the term glycolysis. [2 marks]

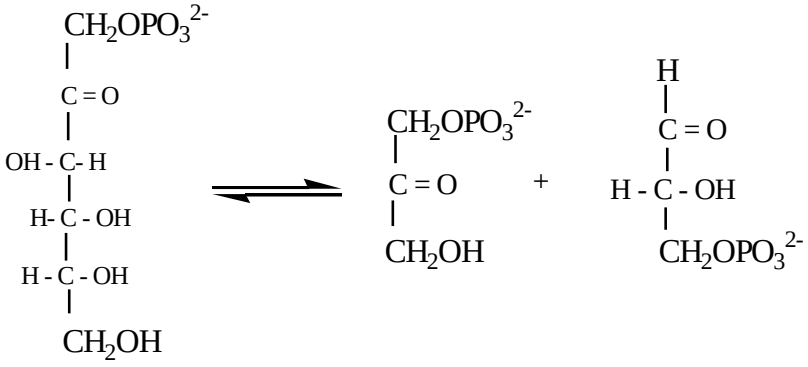
2. Explain the occurrences shown by the equations below stating the enzymes involved at each stage in the process of glycolysis.

(a)



[3 marks]

(b)



[3 marks]

3. (a) Explain the reactions that occur during β-oxidation of fatty acids. [4 marks]

   (b) Explain the relationship between hyperglycemia and ketogenesis in type 1 diabetes mellitus. [2 marks]

4. (a) State three roles of proteins in the human body. [3 marks]

   (b) Explain a transamination reaction using appropriate equations. [3 marks]

5. (a) State the functions of the following components of the electron transport chain
   (i) Co-enzyme Q [1 mark]
   (ii) Iron – sulfur protein [1 mark]
   (iii) NAD – dehydrogenase [1 mark]

   (b) Define the term oxidative phosphorylation using appropriate equations. [3 marks]

SECTION B (40 MARKS)

6. Discuss the tricarboxylic acid cycle stating the enzymes involved at each stage. [20 marks]

7. Describe gluconeogenesis pathways and illustrate the pathways circumvented in reverse glycolysis. [20 marks]

8. Discuss the various stages of the urea cycle during amino acid degradation. [20 marks]
