



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2017/2018**

**FIRST YEAR FIRST SEMESTER EXAMINATIONS  
FOR THE DEGREE OF MASTER OF SCIENCE IN  
BIOMEDICAL SCIENCES**

**CITY CAMPUS**

**PMT 816: MEDICAL BIOCHEMISTRY**

Date: 18<sup>th</sup> March, 2018

Time: 8.00 - 11.00 am

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**INSTRUCTIONS:**

- Answer Question ONE and any other FOUR.



1. Many diseases that cause damage to tissue result in an increase in the plasma enzyme concentrations. Identify and discuss specific examples of enzymes that can be used in diagnosing diseases associated with the heart, liver and the skeletal muscles (20 mks)
2. Carbohydrates are the most abundant macromolecules in nature. Discuss the polysaccharides of biological importance and briefly explain their properties (20 mks)
3. Discuss the mechanisms involved in the utilization of glucose in the body (20 mks)
4. Discuss ketogenic and glucogenic aminoacids and give an outline of the acid base properties of aminoacids (20 mks)
5. Discuss *de novo* and salvage pathways for synthesis of pyrimidine nucleotides (20 mks)
6. Explain the structural and functional differences between myoglobin and hemoglobin and how mutations in the hemoglobin molecule can lead to specific diseases (20 mk)