



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A constituent of JKUAT)

Faculty of Applied and Health Sciences

DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN FOOD TECHNOLOGY & QUALITY ASSURANCE

AFS 4202: METABOLISM OF BIOMOLECULES

SPECIAL/SUPPLEMENTARY EXAMINATION

FEBRUARY 2013 SERIES

2 HOURS

Instructions to candidates:

This paper consist of **FIVE** questions

Answer question **ONE** (compulsory) and any other **TWO** questions

Question ONE

- a) Define the following terminologies
 - (i) Hydrolytic rancidation (2marks)
 - (ii) Transamination (2marks)
 - (iii) Hydrogen carrier system (2marks)
- b)
 - (i) State the **THREE** series of reactions that take place during metabolism of glucose (3marks)
 - (ii) State where each of the above series of reaction take place (3marks)
 - (iii) State the products of each state mentioned in (b) I above (6marks)
- c) Account for the 38 ATP molecules released when one molecule of glucose in fully metabolized to release energy (9marks)
- d) State **THREE** factors that influence Basic metabolic rate of a person (3marks)

Question TWO

Explain how fats are utilized in the body for energy production (20marks)

Question THREE

Explain in details one of the three series of reaction that glucose undergoes during its metabolism in the body. **(20marks)**

Question FOUR

Illustrate the entry of Amino Acids into the TCA cycle **(20marks)**

Question FIVE

- a) With specific examples describe the two types of deamination. **(10marks)**
- b) What are ketone bodies **(1mark)**
- c) State the three examples of ketone bodies. **(3marks)**
- d) Illustrate by the use of a flow diagram β -oxidation of lipids **(6marks)**