



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

UNIVERSITY EXAMINATIONS

2021 / 2022 ACADEMIC YEAR

**MAIN EXAMINATIONS
MAIN CAMPUS**

SECOND YEAR SECOND SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN BIOCHEMISTRY**

COURSE CODE: SBM 222

COURSE TITLE: METABOLISM OF LIPIDS

DATE: FRIDAY, 29TH APRIL 2022

TIME: 3:00 – 5:00 P.M.

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in section A and **ANY TWO** selected from section B

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ►

SECTION A (SHORT ANSWER QUESTIONS, 40 MARKS)

SBM

224-Metabolism of α

1. Discuss the regulation of beta-oxidation. (5 marks)
2. Describe the role and cofactors of the enzyme acetyl-CoA carboxylase in the synthesis of long chain fatty acids. (5 marks)
3. What are the causes of familial hypercholesterolemia (FH). (5 marks)
4. Draw the chemical structure of a) phosphatidate b) diacylglycerol. (5 marks)
5. What is the role of cytochrome P450 in the formation of cholesterol Esters? (5 marks)
6. Describe the four levels of ketogenesis regulation. (5 marks)
7. Explain the outcome of the accumulation of acetylCoA in the mitochondria of the liver. (5 marks)
8. What are chylomicrons. (5 marks)

SECTION B (ESSAY QUESTIONS, 30 MARKS)

9. How can cholesterol biosynthesis be regulated. (15 marks)
10. Discuss the synthesis of the following phospholipids: Phosphatidylcholine, phosphatidylinositol and cardiolipin. (15 marks)
11. Discuss atherosclerosis. (15 marks)