LAIKIPIA UNIVERSITY

UNIVERSITY EXAMINATIONS

SECOND SEMESTER 2023/2024 ACADEMIC YEAR

THIRD YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF BIOMEDICAL SCIENCE AND TECHNOLOGY (BMED)

BMED 321: CATABOLISM AND ANABOLISM OF BIOMOLECULES

STREAM: R ***TIME: 2 HRS***

DAY: FRIDAY [2.30P.M – 4.30.PM] ***DATE: 12/04/2024***

THIS QUESTION PAPER CONSISTS OF TWO (2) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS: ***ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS***

SECTION A: ALL QUESTIONS ARE COMPULSORY (40 MRKS)

QUESTION ONE

Describe the degradation process of nucleoprotein through the digestive tract **(5 Marks)**

QUESTION TWO

Illustrate the regulatory process involved in purine nucleotide biosynthesis **(5 Marks)**

QUESTION THREE

Determine the bioenergetics for a 16 carbon palmitic acids when it undergoes complete oxidation **(5 Marks)**

QUESTION FOUR

Describe the oxidation of pyruvate that serves as a link from glycolysis to Krebs cycle **(5 Marks)**

QUESTION FIVE

Elucidate the elemental sources of purine bases **(5 Marks)**

QUESTION SIX

Show diagrammatically the biochemical events that delivers Nitrogen to the liver cells **(5 Marks)**

QUESTION SEVEN

Explain a reaction that is catalysed by debranching enzymes in glycogenolysis **(5 Marks)**

QUESTION EIGHT

Write the biochemical reactions for the salvage synthesis of pyrimidines **(5 Marks)**

SECTION B: ANSWER ANY TWO QUESTIONS OF YOUR CHOICE (30 MRKS)

QUESTION NINE

Compare and contrast anabolic and catabolic process in relation to fatty acids

QUESTION TEN

Illustrate the common intermediates involved in the anabolism of amino acids **(15 Marks)**

QUESTION ELEVEN

Discuss the allosteric regulation of gluconeogenesis and glycolysis pathways to meet the cells metabolic requirements depending on the host metabolic needs **(15 Marks)**