



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

**BACHELOR OF TECHNOLOGY IN INDUSTRIAL MICROBIOLOGY AND
BIOTECHNOLOGY**

ABT 4407: PROTEINS FOR DIAGNOSIS

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: Pick Date May 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

- (a) State the criteria used in enzyme immobilization. (3 marks)
- (b) Outline THREE advantages of immobilizing enzymes for diagnosis. (3 marks)
- (c) State the use of the following enzymes in diagnosis;
- (i) Glycerol kinase
- (ii) Glucose oxidase (2 marks)
- (d) Identify enzymes used in determination of the following;
- (i) Cholesterol esters in serum

- (ii) Alcohol levels in biological fluids (2 marks)
- (e) Outline how blood urea nitrogen can be assayed. (4 marks)
- (f) Give FOUR indications of glucose in diagnosis. (4 marks)
- (g) State FOUR factors that affect antigen-antibody reactions. (4 marks)
- (h) Outline FOUR advances in immunoassay technology. (4 marks)
- (i) Name FOUR important metabolites in the human body and the disease they are associated with. (4 marks)

Question TWO

Discuss:

- (a) The advantages and disadvantages of using radioimmunoassay technique. (8 marks)
- (b) The advances in the use of antibody as an immunoassay reagent. (12 marks)

Question THREE

- (a) Explain how serum triglyceride concentration can be estimated. (14 marks)
- (b) Enumerate the advantages and disadvantages of using enzyme immunoassay technique. (6 marks)

Question FOUR

- (a) Describe the different types of ELISA technique. (10 marks)
- (b) Explain the use of labels in immunoassay. (10 marks)

Question FIVE

- (a) Discuss the procedure and interpretation of results of the dipstick membrane-based pregnancy test. (10 marks)
- (b) Contrast the Direct and Indirect latex-based immunological assays as used in detecting hCG in pregnancy. (10 marks)