TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BTAC 12S AND 13M

ACH 4411: BIOANALYTICS II

END OF SEMESTER EXAMINATION

SERIES: Select series 2016

TIME: 2HOURS

DATE: Pick Date May2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No questions. Attempt Choose instruction.

Do not write on the question paper.

Question ONE

(a) Describe the general-sized concepts of classifying miniaturized analytical systems 6 marks

(b) Outline four importance of buffer 2 marks

(c)Describe three ways of preventing errors in pre analytical phase 3 marks

(d) Describe three factors affecting the activity of Sensors 3 marks

(e) Outline six factors taken into consideration when designing an instrumentation system 3 marks

(f) Explain the following terms

i. Sonication 2 marks

ii. Measuring interval 2 marks

iii. Trueness 2 marks

iv. LuminolChemi1uminescence 2 marks

(g) Differentiate between Soxhlet extraction method and bourdon tube 5marks

Question TWO

(a) Explain the following methods of sample preparation

i) Mechanical techniques 5 marks

ii) Solid-phase microextraction (SPME) 5 marks

(b) Discuss the Pre analytical Phase outside the laboratory 10 marks

Question THREE

(a) Explain the purge and trap method and headspace method for the isolation of volatile organic compounds from water 10 marks

(b) Discus the concept of miniaturization 10 marks

Question FOUR

(a) Discuss the effects Buffer Salts, Filtration and Incomplete Procedural Information on Buffer 10 marks

(b)Explain the Control Measures in bioanalysis 10 marks

Question FIVE

(a) Discuss the following types of Sensor Transducers

i) temperature transducers 5 marks

ii) liquid expansion and vapour pressure sensors transducer 5 marks

(b) Explain the following physical phenomenum

i) bio- and chemiluminescent 5 marks

ii) Firefly Bioluminescence method 5 marks