



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences

DEPARTMENT OF **PURE AND APPLIED SCIENCES**

DIPLOMA IN ANALYTICAL CHEMISTRY

(DAC 10M)

ACH 2311 : APPLIED ANALYTICAL CHEMISTRY II

SPECIAL/SUPPLEMENTARY: EXAMINATIONS

SERIES: February 2013

TIME: 2 HOURS

INSTRUCTIONS:

You should have the following for this paper

- *Answer booklet*

This paper consists of **FIVE** questions.

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

This paper consists of 2 PRINTED pages

Question ONE

- a) Explain why cellulose is not interactable in its nature. (4marks)
- b) How can the problem of interactability of cellulose in its nature be solved. (4marks)
- c) Briefly discuss THREE techniques that are used for treating fibre involved in regeneration of cellulose. (12marks)
- d) Give FIVE examples of other natural polymers and five examples of synthetic polymers.

(10marks)

Question TWO

- a) State SIX advantages of vulcanized rubber and drawbacks of Raw rubber (13marks)
- b) Give one use of regenerated fibre (2marks)
- c) Discuss the process of production of vulcanized fibre. (5marks)

Question THREE

- a) Define insecticide (2marks)
- b) Give a brief description of three classes of insecticides (9marks)
- c) Give TWO examples of the above classes of insecticides you have described (3marks)
- d) (i) What do you understand by a natural insecticide? (2marks)
- (ii) Give FOUR examples of natural insecticides. (4marks)

Question FOUR

- a) State the main components of Portland cement. (5marks)
- b) Explain the main purpose of addition of each component in Portland cement. (6marks)
- c) List THREE
 - (i) Primary plant nutrients
 - (ii) Secondary plant nutrients
 - (iii) Microplant nutrients

(9marks)

Question FIVE

- a) State the sources of
 - (i) Natural organic
 - (ii) Natural inorganic fertilizers
 - b) What are
 - (i) Soil improvers
 - (ii) Soil amendments
 - c) List FIVE main ingredients of cement and explain function of each. (4marks)
- (10marks)