



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
UNIVERSITY EXAMINATION FOR BACHELOR OF SCIENCE IN CIVIL
ENGINEERING
[Institutional Based Programmes]

ECE 2413: IRRIGATION ENGINEERING II

END OF SEMESTER EXAMINATION
SERIES: AUGUST 2013
TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Pocket Calculator*

This paper consists of **FIVE** questions.

Answer question **ONE** any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One (Compulsory)

- a) Outline the main characteristics of a site to be selected for cross drainage works. **(8 marks)**
- b) Describe the design and construction of drainage **(4 marks)**
- c) Describe how efficient use of water is in irrigation engineering. **(8 marks)**

Question Two

Describe with the aid of a diagram how the most commonly used pump operates in irrigation engineering.
(20 marks)

Question Three

Describe the most commonly used canal cross-section in irrigation and drainage with the aid of a diagram.

Question Four

a) Describe division boxes in irrigation engineering **(10 marks)**

b) Describe flumes in irrigation engineering **(10 marks)**

Question Five

Describe the circumstances when it is necessary for water to be carried across a road which is at the same level as or below the canal bottom.
(20 marks)