



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:  
**BACHELOR OF SCIENCE IN CIVIL ENGINEERING**

ECE 2509: ENGINEERING MANAGEMENT II

**END OF SEMESTER EXAMINATION**

SERIES: DECEMBER 2013

**TIME ALLOWED: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

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

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

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**Question One (Compulsory)**

a) Define the following terms as used in work study:

- (i) Time study
- (ii) Work sampling
- (iii) Synthetic data

**(6 marks)**

b) Briefly describe the subject matter that contract documents refer to

**(6 marks)**

- c) Briefly explain any FIVE fundamentals canon Engineers should abide by in the fulfillment of their professional duties. **(10 marks)**
- d) Briefly describe the duties of a project engineer **(8 marks)**

**Question Two**

- a) Outline any EIGHT traits of a good projects' engineer **(4 marks)**
- b) Briefly explain any FIVE functions of an engineer **(10 marks)**
- c) State SIX principles of any tendering process. **(6 marks)**

**Question Three**

There is a culture and environment that induces and sustains economic offences and multipractices in the construction industry in Kenya, discuss. **(20 marks)**

**Question Four**

- a) With an aid of a flow diagram illustrate the steps involved in time study. **(8 marks)**
- b) Briefly describe the elements that must be present before an agreement becomes a contract. **(12 marks)**

**Question Five**

- a) State the roles of an Engineer in combined projects:
- b) (i) Outline the various techniques of work measurement.  
(ii) An operator manufactures 50 jobs in 6 hours and 30 minutes. If this time includes the time for setting his machine. Calculate the operators' efficiency. Standard time allowed for the job was:

Setting time = 35min

Production time per piece = 8 min **(15 marks)**