



**TECHNICAL UNIVERSITY OF MOMBASA**

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**FACULTY OF ENGINEERING AND TECHNOLOGY IN CONJUNCTION WITH KENYA  
INSTITUTE OF HIGHWAYS AND BUILDING TECHNOLOGY (KIHBT)**

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:

HIGHER DIPLOMA IN BUILDING ECONOMICS

EBE 3111: SPECIFICATION AND QUANTITIES I B

END OF SEMESTER EXAMINATIONS  
SERIES: OCTOBER 2016

**TIME: 2 HOURS**

**Instruction to candidates**

You should have the following for this examination

- Answer booklet
- Pocket Calculator

This paper consist of five question.

Answer any three questions of the five questions

All question carry equal marks

Maximum marks for each part of a question are as shown

This paper consist of two printed pages

### Question 1

- a) Write specification notes for excavation works for a proposed Storm water drainage system under the following headings
- i) Preliminary Survey
  - ii) Actual Survey
  - iii) Excavation and Earthworks
  - iv) Timbering to trench
  - v) Disposal of excavation materials
  - vi) Safety to excavations
- (12 marks)
- b) Write Specification notes for the construction works of railway track under the following headings
- i) Preliminary works
  - ii) Topographical survey
  - iii) Excavation and Earthworks
  - iv) Stabilization of formation
  - v) Surface drainage
- (8 marks)

### Question 2

- a) Write Specification notes for construction of a new proposed Tarmac road on a surveyed route under the following headings
- i) Sub grade Preparation.
  - ii) Sub Base construction
  - iii) Base coarse construction
  - iv) Application Stabilized layer
  - v) Primer application
  - vi) Bitumen Surfacing laying
- (12 marks)
- b) Write specification notes for provision of Site security to a construction site. (8 marks)

### Question 3

- a) State the role of specifications in Civil Engineering construction. (5 marks)
- b) Define the following types of Specifications in Civil Engineering construction
- i) General specifications
  - ii) Particular specifications
  - iii) Product specifications
  - iv) Standard specifications
  - v) ISO Specifications
- (15 marks)

#### **Question 4**

Write specification notes for excavation and construction of a Septic Tank under the following headings

- i) Excavation and Earthworks
  - ii) Timbering to excavations works
  - iii) Concrete to bottom Slab
  - iv) Masonry Walling
  - v) Plastering work
  - vi) Floor Screed
  - vii) Step Irons
  - viii) Formwork to Cover Slab
  - ix) Concrete to Cover slab
  - x) Manhole cover
- (20 marks)

#### **Question 5**

a) Write specification notes for laying concrete sewer drainage pipes under the following headings.

- i) Transportation of pipes
  - ii) Earthworks
  - iii) Laying pipes and jointing
  - iv) Testing of drainage system
  - v) Backfilling
- (10 marks)

b) Write Specification notes for construction of a concrete road under the following headings

- i) Concrete Materials
  - ii) Preparation and Earthworks
  - iii) Water proofing underlay
  - iv) Laying and fixing of reinforcement
  - v) Concrete works
- (10 marks)