



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

DIPLOMA IN ARCHITECTURE

DIPLOMA IN BUILDING & CIVIL ENGINEERING

EBC 2303: BUILDING & CIVIL ENGINEERING WORKS - SPECIFICATIONS

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 any **THREE** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One

- a) State the importance of specifications in Civil Engineering to the following parties:
- (i) The client
 - (ii) The designer
 - (iii) The contractor
 - (iv) The inspectorate
- (4 marks)**
- b) Briefly describe the following types of specifications in Civil Engineering Construction:
- (i) General specifications
 - (ii) Particular specifications
 - (iii) Product specifications
 - (iv) Product specifications
 - (v) Standard specifications
 - (vi) ISO standards
- (10 marks)**
- c) Briefly describe the main components in specifications writing
- (6 marks)**

Question Two

- a) A new pipeline is to be constructed to connect the new Turkana Oil fields with the Refinery in Mombasa. Under the following heading write specification notes for the preliminary works:
- (i) Preliminary survey
 - (ii) Selection of alignment
 - (iii) Actual survey
 - (iv) Geotechnical survey
 - (v) Earthworks
- (10 marks)**
- b) A new standard gauge Railway Track is to be constructed from Mombasa Port to Nairobi. Write specification notes for the construction works under the following headings:
- (i) Preliminary works
 - (ii) Topographical layout
 - (iii) Earth works
 - (iv) Compaction of formation
 - (v) Surface drainage
- (10 marks)**

Question Three

- a) A Tarmac Road is to be constructed already surveyed route. Write specification notes for the works under the following headings:
- (i) Formation preparation
 - (ii) Sub base laying
 - (iii) Base course laying
 - (iv) Stabilized layer
 - (v) Bitumen surfacing
- (10 marks)**

- b) Storm water trenches are to be constructed to drain off water from a proposed highway to a nearby waterway. Under appropriate headings write specifications notes for timbering to the sides of excavations **(10 marks)**

Question Four

A septic tank is to be constructed for disposal and treatment of sewage from a proposed estate. Write specifications notes for the works under the following headings:

- (i) Excavation of pit
- (ii) plunking and strutting
- (iii) Concrete bottom slab
- (iv) Masonry walling
- (v) Plastering to wall surface
- (vi) Floor screeding
- (vii) Step irons
- (viii) Formwork to cover slab
- (ix) Concrete to cover slab
- (x) Manhole cover

(20 marks)

Question Five

- a) Precast concrete culverts are to be laid across a proposed highway for storm water drainage. Write specification notes for the works under the following headings:

- (i) Transportation of precast units
- (ii) Earthworks
- (iii) Laying of precast units (pipes)
- (iv) Concrete surround
- (v) Backfilling

(10

marks)

- b) Write specification notes on construction of rigid concrete pavement under the following headings:

- (i) Base formation
- (ii) Water proofing underlay
- (iii) Concrete mix
- (iv) Reinforcement
- (v) Placing of concrete

(10 marks)