



TECHNICAL UNIVERSITY OF MOMBASA
SCHOOL OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF BUILDING & CIVIL ENGINEERING
UNIVERSITY EXAMINATION FOR:

DIPLOMA IN CIVIL ENGINEERING
DCE 2313 ESTIMATION AND COSTING

END OF SEMESTER EXAMINATION
SERIES: APRIL 2025
TIME: 2 HOURS

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **five** questions. Attempt any **THREE** questions.

Do not write on the question paper.

QUESTION ONE (20 Marks)

- a) Discuss the advantages of hiring a construction plant (6 Marks)
- b) List down the reason for using construction plants on site (4 Marks)
- c) A company purchases a mixer for 600,000 and anticipates a 5 years' life span and scrap value of 5000 Kenyan pounds calculate depreciation value per year (8 marks)
- d) State FOUR sources of cost information to an estimator (2 Marks)

QUESTION TWO (20 Marks)

- a) Outline 6 reasons why the rates quoted for Concrete works for dongo kundu by pass highway will differ from those of the proposed thwake dam in kitui. (9 Marks)
- b) Briefly explain four factors to consider when costing concrete works. (8 Marks)
- c) Explain the following terms as used in estimation
 - i) Unit rate
 - ii) All in labor rate (3 Marks)

QUESTION THREE (20 Marks)

- a) The national government is planning to construct new jetties at the counties of Mombasa and Kisumu as a lead estimator for a contractor briefly explain Six factors which may affect the rate to be quoted for concrete works by your firm in the two projects. (12 Marks)
- b) Briefly explain factors to consider when costing formworks. (8 Marks)

QUESTION FOUR (20 Marks)

- a) Discuss the difference between nominated sub-contractors and contractors. (6 Marks)
- b) Using the data below, calculate the unit rate for 12mm diameter twisted reinforcement bar including cutting bending tying wire and spacers per kg
 - i) Unskilled labour-kshs.25/hr.
 - ii) Consider 1000kg of reinforcement
 - iii) Cost of materials as delivered to site
 - iv) 12mm reinforcement full length -ksh 600
 - v) 12mm diameter reinforcement weighs 0.888kg/m
 - vi) Assume 1000kg of reinforcement is fixed in 75hrs
 - vii) Unloading and parking 3hours per 1000kg
 - viii) Make reasonable assumptions where necessary
 - ix) Skilled labor-kshs .50/hr (14 Marks)

QUESTION FIVE (20 Marks)

- a) Discuss types of payments certificates in a construction project. (6 Marks)
- b) Build up rates for 12mm terrazzo paving (1:3) including grinding and polishing surface per m² given the data below. Skilled labor and unskilled labor sh80 and sh 40 respectively
 - i) Cost of white cement 50 kg ksh 1000

- ii) Cost of terrazzo chipping per 50kg ksh 600
- iii) Density of white cement 1440kg/m^3
- iv) Density of chipping 1400 kg/m^3
- v) Assume any other relevant information.

(14 marks)