



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of Building & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING

TCV 4420 : ESTIMATING AND COSTING OF CONSTRUCTION WORKS

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2024

TIME: 2 HOURS

Instructions to Candidates

You should have the following for this examination

-Answer booklet, calculator, examination pass and student ID

This paper consists of **five** questions.

Attempt question ONE (Compulsory) and any other TWO questions

Do not write on the question paper.

QUESTION ONE (COMPULSORY) (30marks)

- a) Outline the following methods of procurement of works stating their merits and demerits;
 - i) Open tenders
 - ii) Selective tenders
 - iii) Package deals. (15marks)
- b) Explain the following factors which contribute to discrepancies in the rates quoted in the bill of quantities;
 - i) Deliberate distortion
 - ii) What the traffic can bear
 - iii) Financial conditions
 - iv) Tendering,
 - v) Standards
 - vi) Facilities. (15 marks)



ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO, (20marks)

Build up costs for the following preliminary items;

- i) Sign board,
- ii) Water for the works,
- iii) Tower crane
- iv) Electricity for the site,
- v) Site agent.

QUESTION THREE

- a) Outline the factors that should be considered when pricing plant.
- b) Determine the cost of concrete, mix (1:1.5 :3), using a NT mixer 200l capacity, purchased at a price of sh. 1.5million and having a resale value of sh. 600,000 after 4years of use.

Assume the following prices of materials;

- i) 50kg bag of cement, sh. 750,
- ii) Coarse aggregates 1m³ sh. 6000
- iii) Sand 1m³ sh.2000, allow for 20 % for bulking.

QUESTION FOUR (20 marks)

- a) With the aid of hypothetical examples, Outline the application of the following methods of approximate estimating stating in each case their limitations
 - i) Functional unit method,
 - ii) Superficial area method,
 - iii) Storey enclosure area method.

QUESTION FIVE (20marks)

Build up unit rates for the following bill of quantities items:

- i) Excavate for foundation trench, exceeding 1.5m and not exceeding 3.0m deep.
- ii) Extra over, foundation trench excavation exceeding 1.5 and not exceeding 3.0m deep.
- iii) 200mm thick solid concrete block wall, in concrete blocks and bedded in cement mortar (1:3)
- iv) Two coats of plastic emulsion plastic emulsion paints on ceilings.