



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

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: NOVEMBER 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) Describe briefly, the following types of contractual methods stating their merits and demerits:
 - i) Design and build,
 - ii) Package deals,
 - iii) Contracting management. (15marks)
- b) Build up the cost of 1m³ of basement excavation using a mechanical tractor with a 1.2m³ shovel. The tractor was purchased at a cost of sh. 32m, and has a salvage value of sh.12m after 5years of use. The basement excavation exceeds 3.0 and does not exceed 4.5m. Assume any other data not provided. (25marks)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO (20marks)

- a) Explain the term approximate estimating, and state where it is generally applied.

- b) i) Outline the rules applied in the cubic unit method of approximate estimating and state its limitations.
- ii) Use the cubic unit method to determine the cost of the proposed building shown on drawing no. EST/003/007.

QUESTION THREE (20marks)

Build up costs for the following preliminary items, for a proposed building project costing sh. 800m, and for a duration of 30months.

- a) Sign board,
- b) Water for the works,
- c) Tower crane,
- d) Electricity for the site,
- e) General foreman.

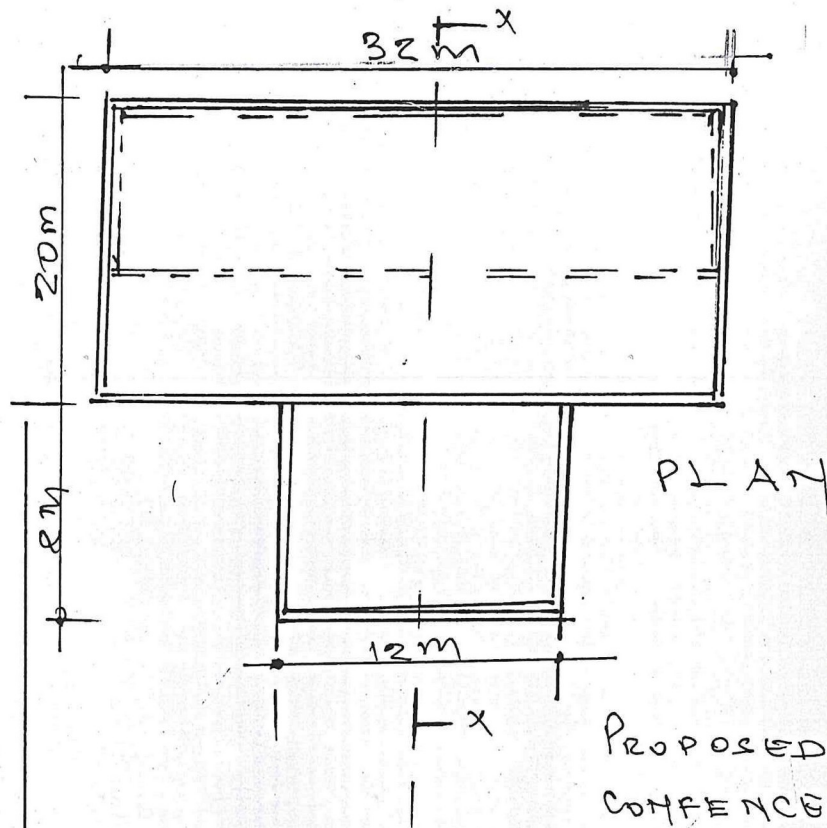
QUESTION FOUR (20marks)

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

- a) 200mm thick solid concrete block wall, in concrete blocks and bedded in cement mortar (1:3)
- b) Two coats of plastic emulsion plastic emulsion paints on ceilings.
- c) 4mmthick clear sheet glass, in panes exceeding 0.1 and not exceeding 0.5m².
- d) 20mm thick cement sand (1:3) plaster, on coral block walls.

QUESTION FIVE (20 marks)

- a) **Explain the management** contracting method of work procurement, and state its strengths and probable limitations. (8marks)
- b) State where negotiated contracts are typically applied, and using hypothetical examples outline the three types contracts applied in this method of work procurement. (12marks)



PROPOSED MBARAKI
CONFERENCE HALLS.
DRAWING NO
EST/003/007.

