



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF SCIENCE AND
TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY MAIN EXAMINATIONS
2023/2024 ACADEMIC YEAR**

FIRST YEAR FIRST SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
BACHELOR OF TECHNOLOGY EDUCATION
IN
BUILDING AND CIVIL TECHNOLOGY**

COURSE CODE: TEB 463

COURSE TITLE: QUANTITY SURVEYING I

DATE: 11TH DECEMBER, 2024

TIME: 3 P.M – 5 P.M

INSTRUCTIONS:

1. This paper contains FIVE questions
2. **Question ONE (1) is Compulsory**
3. **Attempt a total of THREE questions in this booklet.**
4. Marks for each question are indicated in the parenthesis.

Examination duration is **2 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over.

Question 1 **COMPULSORY** **(40 marks)**

- a) Give a brief historical back ground on how the field of quantity survey was developed into a profession in construction industry. (6 marks)
- b) Distinguish between the roles of client's and contractor's quantity surveyors (6 marks)
- c) Clearly outline the process for formation of a building contract. (6 marks)
- d) Define the term bills of quantities and state its purpose in construction industry (8marks)
- e) Explain the following parts of the bills of quantities
- i) Preliminaries (3 marks)
 - ii) Prime cost and provisional sums (3 marks)
 - iii) Standard forms (3 marks)
- f) Describe the process of preparing the Bills of quantities using tradition method. (5 marks)

Question 2 **(15 marks)**

- a) The County Government of Lamu sets up a centre of excellence in marine technology at a cost of Kshs. 30 million. The contract period is estimated as 12 months, excluding defects liability period of six (6) months and final payment 2 months after the defects liability period. If the valuations per respective months are as tabulated below and retention percentage is 10%, draw out the valuation certificate for the whole 20 months period. (10 marks)

VALUATION SCHEDULE

MONTH	AMOUNT (KSHS)
1	1,500,000
2	2,000,000
3	3,500,000
4	1,600,000
5	2,400,000
6	3,200,000
7	2,800,000
8	4,000,000
9	2,900,000
10	1,100,000
11	3,800,000
12	1,200,000
TOTAL	30,000,000

- b) Explain the term valuation in a building contract. Prepare a diagrammatic presentation of valuation, certification and payment to a general contractor from pre-tender to defects repair periods. Assume 9 valuations during the contract periods (5 marks)

Question 3 **(15 marks)**

- a) Explain the meaning of the term 'tendering' giving examples. (4 marks)
- b) Outline the procedure for open tendering. (4 marks)

- c) It is essential to carry out cost-estimating before the proposed structure (project) is implemented. Justify this statement and describe the two types of estimates in construction industry. (7 marks)

Question 4**(15 marks)**

Determine the material quantities and the cost of a substructure for Vocational Training Centre workshop measuring 12.0m x 8.0m internally. (15 marks)

Specifications

The foundation is concrete strip 600mm x 200mm (1:3:6)

Foundation wall is dressed quarry stones 250 x 300mm 1.0m deep from the stripped level.

The hardcore is a well compacted layer of rough natural stones 300mm thick.

The blinding of 50mm murrum.

DPM is 1000g polythene paper.

Over site concrete is 150mm thick concrete mix (1:2:4)

Take

1. Ballast (1600kg/m³) @ Kshs.2,300/= per tone.
2. Sand (1450kg/m³) @ Kshs.1, 000/= per tone
3. Hardcore (1500kg/m³) @ Kshs.800/= per tone.
4. Murrum (1350kg/m³) @ Kshs.600/= per tone.
5. Cement (37 litres/bag) @ Kshs.700/= per bag
6. Water (litres) @ Kshs.1.0 per litre.
7. Dressed stones (meters) Kshs.240 per metre
8. Excavation
 - i) Stripping (150mm thick), 1 casual/m³ @ Kshs.200/= per m³
 - ii) Trench (1 casual/m³) @ Kshs.300/= per m³
9. Water to cement ratio (1:2.5)
10. 30% for wastage, spillage and shrinkage
11. Mortar (1:4) – taking 25% of the foundation wall
12. Construction takes 18 days
 - i) 6 casual @ Kshs.500/= per head per day.
 - ii) 3 masons @ Kshs.800 per head per day

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