



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN CIVIL ENGINEERING

BCECD 317: MEASUREMENT, ESTIMATING AND COSTING

DATE: 6/12/2021

TIME: 8:30 – 10:30 AM

Instructions:

- This paper comprises of **five** questions
- Question **one** is **compulsory** and carry 30 marks
- Answer any **other two** questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Define the following terminology.
- Early warning in project management
 - Specifications (4 marks)
- b) List 3 (three) duties of the following personnel;
- Clerk of Works
 - Estimator (6 marks)
- c) Using simple sketches illustrate the following columns in a dimension paper used when taking off quantities.
- Timessing
 - Booking
 - Squaring
 - Description (10 marks)
- d) Using hypothetical figures illustrate the following units of measurement;
- Linear
 - Area
 - Cubic
 - Number (10 marks)

QUESTION TWO (20 MARKS)

- a) Explain the following methods of approximate estimating.
 - i. Unit method
 - ii. Floor area method (8 marks)
- b) Using a line diagram explain the components of a unit rate. (5 marks)
- c) Describe 4 types of construction contracts. (7 marks)

QUESTION THREE (20 MARKS)

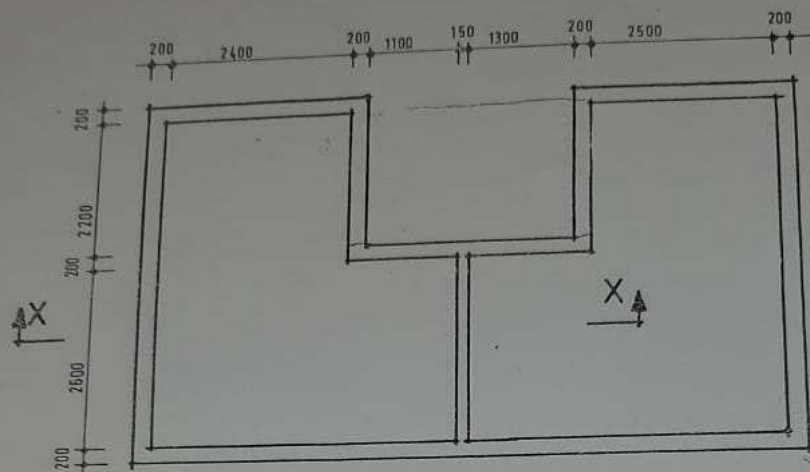
- a) Explain the following terms as used in Building and Civil Engineering contracts.
 - i. Liquidated damages
 - ii. Final accounts
 - iii. Prime Cost Sum
 - iv. Provisional Sum
 - v. Compensation events (10 marks)
- b) Explain 4 conditions under which a contract period can be terminated. (4 marks)
- c) Outline 2 differences between Civil Bill of Quantities and Building works Bill of Quantities. (2 marks)
- d) List two methods of paying a contractor. (4 marks)

QUESTION FOUR (20 MARKS)

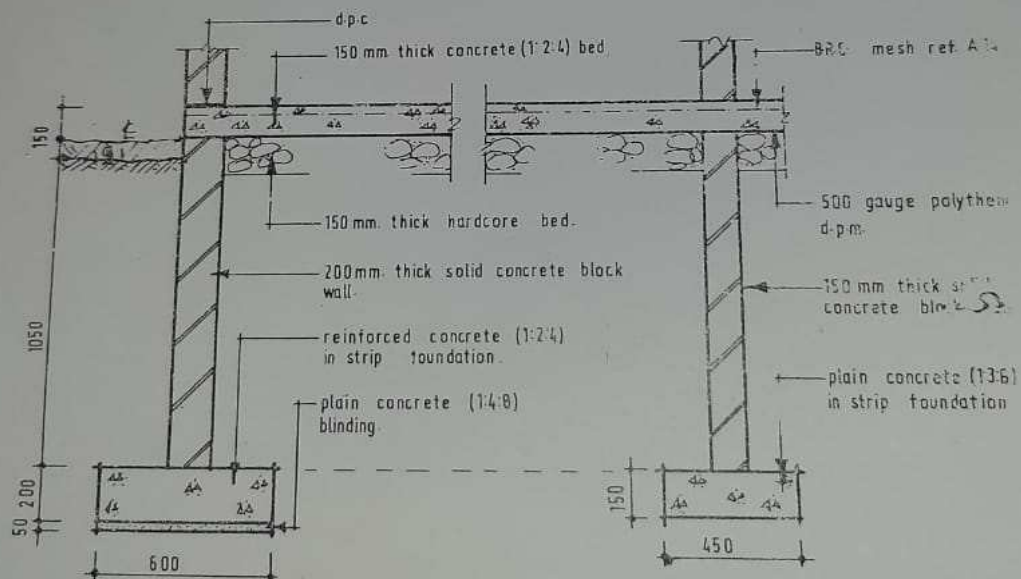
- a) List FIVE contract documents. (5 marks)
- b) Outline THREE types of payment certificates prepared by the quantity surveyor. (9 marks)
- c) Explain the following methods of tendering stating two advantages and disadvantages respectfully.
 - i. Serial Tendering
 - ii. Nomination (6 marks)

QUESTION FIVE (20 MARKS)

Figure 1 above, take off all quantities in substructure up to including dpc. Use SMM for Building Works.



PLAN



SECTION X-X

DRAWING No 01