



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

DIRECTORATE OF TVET

SECOND YEAR FIRST TERM EXAMINATION FOR

DIPLOMA IN BUILDING TECHNOLOGY

DIPLOMA IN CIVIL ENGINEERING

ESTIMATING AND COSTING

DATE: 27/7/2022

TIME: 2:30 – 5:30 PM

INSTRUCTIONS

- *This paper consists of **Five** questions.*
- *Answer **All** questions*
- *Maximum marks for each part of the question are as shown.*

- a) Define the term estimate. (2 marks)
 - b) Outline **FOUR** roles of an estimator during pre-tender period. (4 marks)
 - c) Explain each of the following terms as used in estimating and costing;
 - i. unit rate
 - ii. man-hour
 - iii. labour - constant (6 marks)
 - d) Explain the importance of estimating and costing in a construction project. (8 marks)
- a) Explain each of the following sums included in bills of quantities;
 - i. prime cost sum;
 - ii. provisional sum;
 - iii. contingency sum;
 - iv. contract sum. (8 marks)
 - b) Describe **FOUR** methods of valuing variations. (8 marks)
 - c) Outline **FOUR** steps carried out during valuation of work in progress. (4 marks)

3. a) State **FOUR** causes of variations in building works. (4 marks)
- b) The role of the quantity surveyor is to value variations in a contract. Explain **FOUR** methods that can be used to value the work (8 marks)
- c) Describe **FOUR** types of contract documents. (8 marks)
4. a) Define a nominated subcontractor. (2 marks)
- b) State **THREE** roles of a contractor in a construction. (3 marks)
- c) Explain the **THREE** types of payment certificates in construction. (6 marks)
- d) Outline **FOUR** sources of cost information to an estimator. (6 marks)
- e) State **FOUR** components of a unit rate. (4 marks)
5. a) Differentiate between open tendering and selective tendering. (4 marks)
- b) Explain the importance of tender documents to a contractor. (4 marks)
- c) i. Describe the functional unit method of approximate estimating, stating two places where it is suitably used.
- ii. Using functional unit estimate the cost of constructing a 60 desk capacity classroom, given that a 40 desk capacity would cost ksh 400,000 (10 marks)
- d) State **TWO** merits and **TWO** demerits of using functional unit method of estimating. (4 marks)