NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF CONSTRUCTION MANAGEMENT

INTRODUCTION TO CONSTRUCTION ESTIMATES AND PRICING

BCS 2202

Main Examination Paper

December 2024

This examination paper consists of **three (3)** pages.

Time Allowed: 3 hours

Total Marks: 100

Special Requirements: None

Examiner's Name: Mr. T. Njere

INSTRUCTIONS

1. Answer **Question One** and any other **three (3).**

2. Appropriate use of practical examples is a requirement.

3. Where information is missing, state reasonable assumptions.

MARK ALLOCATION

QUESTION	MARKS
1.	25
2.	25
3.	25
4.	25
5.	25
TOTAL	100

Question One (Compulsory)

Estimating Data

- Bricks $140.00 / 1000
- Cement $11.00 / bag inclusive of V.A.T (15%)
- Pit sand $20.00 / m3
- River sand $25.00 / m3
- Quarry stone $35.00 / ton
- SW1 $3.50/hr WG1 $2.00/hr
- Brickwork Gang (1+2) output 850 bricks / day
- Concrete mixing and placing gang (1+3) output 7m3 / day
- Concrete mix 1 : 2 : 3
- Mortar 0.028m3 / m2
- Working hours 44hrs/week

Using the information above, calculate the rate of the following:

a) 115 mm common brick wall in stretcher bond laid in 1:4 mortar mix. [10 marks]

b) Mass Concrete. [15 marks]

[25 marks]

Question Two

a) Explain any five (5) factors that may affect the accuracy of an estimate. [10 marks]

b) Discuss the following types of estimates, highlighting their advantages and disadvantages.

    i) Elemental estimate [7 marks]

    ii) Analytical estimate [8 marks]

[25 marks]

Question Three

a) Explain the following, giving relevant examples.

    i) Measured Works [5 marks]

    ii) Provisional Sums [5 marks]

    iii) Prime Cost Sums [5 marks]

b) Discuss the importance of **site visits** during the estimation process [10 marks]

[25 marks]

Question Four

a) Explain any **five (5)** technical skills that a good estimator should possess. [10 marks]

b) You have been tasked to procure 200m3 of quarry stone for a concrete slab on a warehouse construction project. Using the information below, calculate how much it will cost to complete the task.

- Quarry $35.00 / ton including V.A.T (15%)

- One Front end loader and 2 tipper trucks to be used
- Each tipper can do only 4 trips / day
- Tipper capacity 7.5 tons each
- Loader dry rate $50.00/hr , tipper dry rate $75.00/hr (each)
- Diesel $1.50/litre
- Total equipment fuel consumption 90litres / day   [15 marks]
- Drivers $4.23/hr (each).

[25 marks]

Question Five

a)   Discuss any **five (5)** sources of estimating data.   [10 marks]

b)   Briefly explain the typical estimation procedure for a building
construction project   [15 marks]

[25 marks]

END OF EXAMINATION