

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF ARCHITECTURE AND QUANTITY SURVEYING
BACHELOR OF QUANTITY SURVEYING (HONOURS) DEGREE
PART II SECOND SEMESTER EXAMINATIONS - MAY 2006**

CONSTRUCTION ESTIMATES AND PRICING – AQS 2205

TIME: 3 Hours

TOTAL MARKS: 100

INSTRUCTIONS

Answer Question 1 and any other 3 Questions. Make the necessary assumptions.

QUESTION 1

Calculate the cost of owning and operating a 10/7 concrete diesel mixer with an output of 0.20m³ per mix with scraper shovel, batch weigher, and aggregate feed apron.

Assume the following:

- Cost of purchasing mixer is \$15 billion
- The mixer operates for 8 hours per day from Monday to Friday
- The mixer uses 7 litres of diesel per 8-hour day and 7 litres of lubricating oil per week
- Cost of lubricating oil \$150,000 per litre
- Cost of petrol \$220,000 per litre
- Cost of diesel \$210,000 per litre

(25 marks)

QUESTION 2

a) What factors influence the accuracy of an estimate? (10 marks)

b) Detail the information you will require in order to come up with the following:-

- i) Superficial area estimate (10 marks)
- ii) Approximate quantities estimate? (5 marks)

QUESTION 3

a) State the main elements contained in the general overheads of a building company and explain how the cost may be allocated in tenders. (5 marks)

b) What are the major factors to be considered when deciding on the profit to be included in a tender? (10 marks)

- c) Discuss the involvement of the contractor's personnel and external organizations in estimating and tendering?

(15 marks)

QUESTION 4

- a) Discuss the items that should be considered when calculating the hire rates for mechanical plants. (10 marks)
- b) Calculate the cost per m³ of excavating foundation trenches, starting at ground level, not exceeding 1.5m deep. (using hand labour). (10 marks)
- c) Remove excavated material from site per m³ (using a 5m³ lorry hauling a distance of 3km) (5 marks)

QUESTION 5

Calculate the cost of labour for the following scenarios:

- a) 2 x SW1 worked from Monday to Friday normal hours (5 marks)
- b) They also worked overtime on Monday after 17.00 hours up to 20.00 hours (10 marks)
- c) 3 x SW1 worked between midnight on Friday and 07.30 hours on Sunday (10 marks)

END OF EXAMINATION