NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF BUILT ENVIRONMENT

DEPARTMENT OF QUANTITY SURVEYING

PART II SECOND SEMESTER EXAMINATIONS – MAY 2013

CONSTRUCTION ESTIMATES AND PRICING – AQS2205

Time: 3 Hours Total Marks: 100

Instructions
Answer Question 1 and any other Three (3) questions

Where information is not adequate, assumptions must be clearly stated

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QUESTION ONE

Discuss the components of a **Unit Rate** giving examples of computations for each component **(25 marks)**

QUESTION TWO

Discuss the following requirements of a project appreciation and enquiries stage of the estimating process

a) Visits to consultants and site **(7 marks)**

b) Method statements **(6 marks)**

c) Enquiries to suppliers and subcontractors **(12 marks)**

QUESTION THREE

a) Explain by giving examples where appropriate the following estimating methods.

i) Unit rate **(5 marks)**

ii) Superficial **(5 marks)**

iii) Elemental estimate **(6 marks)**

b) Discuss the sources of information for the computation of a cashflow forecast for a typical construction project. **(9 marks)**

QUESTION FOUR

a) Areolate construction is tendering for a proposed office block within the Bulawayo city centre and the estimating department has collected information for pricing the tender. Calculate the all-in rate of labour per hour for a skilled worker grade one (SW1) and a worker grade one (WG1) for the tender, given the following information

44 hour week

Basic rate SW1- $3.00, WG1- $1.60

Tool allowance- $0.75/hour

NSSA Fund – 3%

Workers Compensation- 1.75%

General Fund- 2.5%

Pension Fund- 5%

Aids levy- 3%

Leave days- 0.5 days per fortnight

Tea and lunch allowance- $1.20 per day

Transport allowance- $2.50 per day

Accommodation allowance- $3.00 per day

Protective clothing- $2.50 per fortnight

Manpower development fund- 1.5%

Standard Development fund- 1% **(15 marks)**

b) Discuss a typical sequence of events of pricing project overheads and outline the source of information for pricing these overheads **(10 marks)**

QUESTION FIVE

a) Define the term **analogous rate** **(2 marks)**

b) A variation has been issued by the Engineer for using Grade 30 Mpa concrete in lieu of Grade 25 Mpa in beams. Calculate the new variation account rate, considering the following information

Bill rate for Grade 25 Mpa- $ 215.00 /m^3

Overheads and profit at 20%

Note that, labour and plant costs remain constant.

Per m^3	Cement @$12.00 per bag	Concrete stone @$45.00 per m^3	River sand @$25.00 per m^3
Grade 25 Mpa	7 bags	0.88m^3	0.50m^3
Grade 30 Mpa	7.7 bags	0.85m^3	0.52m^3

c) Compute a material, labour and plant schedule for the following **(10 marks)**

Description	Unit	Quantity
Hardcore base course under solid floors of approved non expansive material supplied and carted on by contractor, levelled, well watered and compacted in layers not exceeding 150mm thick to 95% HCE density	m^3	30
150x150 white glazed ceramic wall tiles fixed with and including approved adhesive and pointing in white cement	m^2	120
One brick wall in approved commons in 1:4 cement mortar built in stretcher bond, pointing and jointing as work proceeds	m^2	140
Prepare and apply one coat pink wood primer, one coat universal under coat and two finishing coats white gloss enamel on general surfaces of doors	m^2	350

(13 marks)

END OF EXAMINATION