

**UNIVERSITY OF SOUTH AUSTRALIA
SCHOOL OF GEOINFORMATICS, PLANNING & BUILDING**

PROGRAM(S): **Bachelor of Construction Management & Economics/
Diploma in Built Environment**

COURSE: **BUILDING ESTIMATING 1N (10262)**

EXAMINATION: **Internal Exam, Semester 1, 2003**

DURATION: **3 Hours of Exam time preceded by 10 minutes of Reading
time, a total of 3 Hrs 10 Mins.
For ENTEXT students 10 minutes of Reading time plus 3.5
Hours of Exam time, a total of 3 Hrs 40 Mins.**

EXAMINER: **Sam Baroudi, Tel 22234**

INSTRUCTIONS TO CANDIDATES:

- This exam is worth 50% of the total course marks
 - All questions are of equal value.
 - Attempt ALL five (5) questions.
 - State any assumptions made.
 - No reference materials are allowed.
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NOTES FROM EXAMINER:

Question 1

(20 Marks)

Discuss your understanding in respect to the formatting of tender estimates making reference to the following items.

- a) Takeoff sheets, common layouts and usage.
- b) The various unit rates giving examples of where they would be applicable.
- c) Quantity calculations and how they are incorporated into the estimate.
- d) The project cost summary page and it's purpose.
- e) Computer software and general usage.

Question 2**(20Marks)**

Provide a building cost estimate for the construction of a 2 metre high brick fence allowing for all necessary items in the concrete and brickwork trades to the following requirements. Show all methodology and calculations as appropriate.

- The fence wall is 20 metres long in a straight level run and is of faced standard double brickwork. Allow a header brick to the top of the fence to finish.
- The concrete footing beam is 400mm wide by 600mm deep with 3 xY12 reinforcing bars top and bottom lapped 900mm at joins and W6 ligatures at 900mm centres. The concrete is N20 strength grade.
- The excavated spoil can remain on site near the newly built fence for future use.

Rates

- Face Brickwork – supply \$600/1000 bricks, laying \$850/1000 bricks, mortar & sundries \$100/1000 bricks, laying header brick \$15/lineal metre.
- Concrete Works - N20 concrete supply \$120/cubic metre, Y12 reinforcing bars \$18/6m length, W6 ligatures \$7 each, machine hire required - _ day @ \$60/hour, labour required - 2 persons 1 day @ \$35/hour.

Question 3**(20 Marks)**

Explain modern tendering practices in Australia from the building contractor's point of view making reference to the following in the discussion.

- a) The estimator's role in the building contractor's office.
- b) Estimating procedures in all aspects of pricing building work.
- c) Competitive approaches to reduce building costs.
- d) The effect of advertising in successful tendering.

Question 4**(20 Marks)**

Calculate the following cost estimates for various elements of building work showing all methods used and calculations.

- a) Price the removal of spoil off site from a 3 metre cubed excavation. The bulking factor is 20% and each truck can carry 12 tonnes (subject to a maximum 5 cubic metre capacity) at \$200/load or part load. Allow a sum of \$500 for a machine to load the trucks. Assume dumping of spoil is free.

- b) Price a ceiling to a room, 6m x 3m, allowing for a cornice to the perimeter and insulation above. Rates – supply & fix plasterboard \$18/square metre, supply & fix cornice \$6/ lineal metre, supply & fix insulation \$4/ square metre.
- c) A supervisor is to be priced into a project. They are required half time for a period of 6 months. Their annual salary is \$45,000 not including superannuation payments of 9% and workcover payments of 4% which their employer must make. What amount should be allowed in the estimate for supervision?
- d) A \$5,000.00 Provisional Cost Sum was allowed in a tender estimate for light fittings. The light fittings' s invoiced value was \$3632.50 which included \$250.25 worth of electrical cabling for the electrician's first fix wiring. What amount is returned to the client?

Question 5

(20 Marks)

Discuss only four (4) of the following issues in relation to the estimation of building works. Questions are of equal value and answers should be kept separate to each other. Clearly indicate which questions are being answered.

- a) What is a registration of interest as compared to an invitation to tender?
- b) What are the differences between a building estimator and a quantity surveyor?
- c) What do you understand by the architect issuing an addendum in the tender period?
- d) What would an estimator take note of in conducting a site visit for tender purposes?
- e) What types of items would one find in the preliminaries section of a tender costing?
- f) What do you understand by the term *tender package* in respect of subcontractors?

END OF QUESTIONS