



Mid Year 2005 Final Examination

University of South Australia

Student ID:		Student Name:	
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DIVISION OF INFORMATION TECHNOLOGY, ENGINEERING & THE ENVIRONMENT
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SCHOOL OF NATURAL & BUILT ENVIRONMENTS
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Subject Area:	BUIL	Catalogue Number:	2018
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BUILDING ESTIMATING 1N

Examination Day: Friday	Examination Date: 24 th June 2005
Examination Time: 2pm	Length of Exam: 3 Hour Exam time preceded by 10 minutes of reading time. Note : Entext students 3.5 Hour Exam time preceded by 10 minutes of reading time.

Examination Venue:	Royal Banquet Hall
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Instructions to Candidates

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. Calculators allowed.

EXAMINER: Sam Baroudi (Tel. 8302 2234)
EXAM REVIEWED BY : Jeremy Coggins



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Question 1

(20 Marks)

Building Estimators are a vital part of any construction organisation. Their role in such organisations is to price and win building projects so that these firms can maintain their viability within a very competitive industry as well as prosper and grow. Answer the following questions in regards to aspects of the modern day Building Estimator.

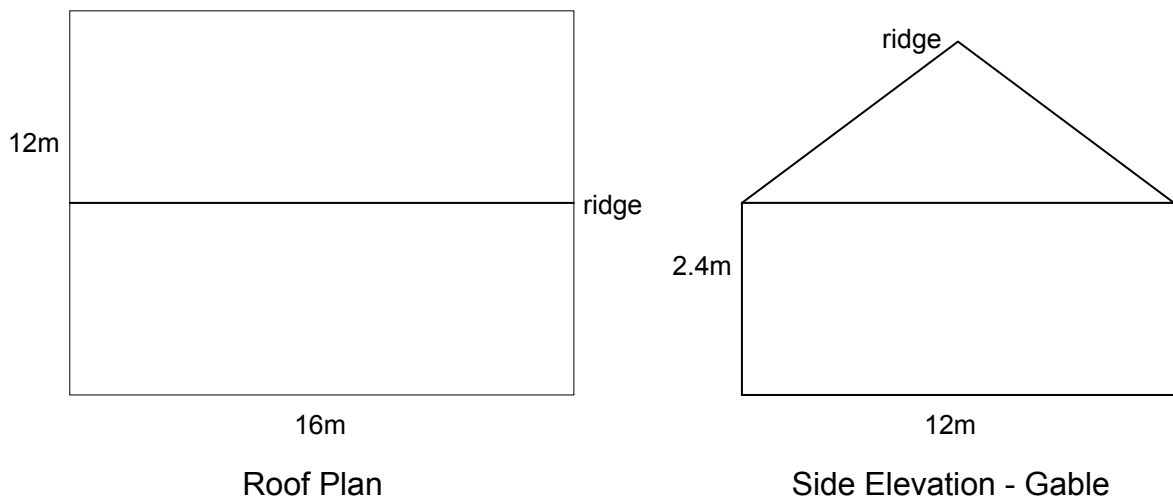
- Outline the differences between a Building Estimator and a Quantity Surveyor.
- Identify typical duties undertaken by a Building Estimator.
- Identify competitive techniques that the Building Estimator may utilise in their pricing of building works.
- How have computers affected the way in which Building Estimators carry out their daily duties?

Question 2

(20Marks)

Refer to the information below and price the complete supply and installation of all roofing requirements. The line drawings are provided for you to gain an appreciation of the scale of the work. The roof is symmetrical and has a pitch of 35 degrees. It is for you to ascertain all the typical requirements that are necessary to provide for the finished roof. Assume you are doing only the roofing section of a full trade by trade cost estimate for this building. Show all calculations.

Note : Draw vertical columns in the exam book so as to format your takeoff and costing information in the preferred manner.



Note that : $\text{Cos } \theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$



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Rates

Supply (major components)

Colorbond Custom Orb sheeting supply \$12.50 / Sq.M

Eaves Gutters \$55.00 per 6m length

150mm diameter downpipes (1 each side of building) \$17.00 per 1.8m length

Ridge capping \$11.20 / LM

Barge capping \$7.00 / LM

Labour (major components)

Colorbond Custom Orb sheeting supply \$4.50 / Sq.M

Eaves Gutters \$6.00 / LM

150mm diameter downpipes \$25 for each completed installation

Ridge capping \$5.50 / LM

Barge capping \$5.50 / LM

All In Rates

Sisalation/Insulation (supplied & fixed over the whole roof area) \$9.50 / Sq.M

Question 3

(20 Marks)

The following questions are related to the pricing of general building works. Provide calculations for each specified situation exclusive of any margins or overheads where relevant. Ensure you show all your workings.

- a) You are currently pricing a medium sized project that will require a site manager to be engaged for what you estimate to be three quarter time for a 9 month period. What would you need to allow in your estimate if you know their annual salary is \$75,000 and that this figure does not include the cost of superannuation (9%) and workcover insurance (6%)? What would you calculate the saving to be if the project was completed 1 month early?
- b) You are required to calculate the quantities (ie. supply only) involved in the construction of a 38 metre strip footing that is 800mm wide by 400mm deep and finished level with the ground. Note that the footing has 4 off Y16 reinforcing bars on the top and 4 off Y16 reinforcing bars on the bottom all lapped 900mm at joins. Note that the reinforcing bars come in 6 metre lengths. There are also W6 ligatures at 900mm centres. Provide the concrete, reinforcing/ligature and spoil removal quantities.
- c) How many 390mm x 190mm x 190mm (ie. length x height x width) hollow concrete blocks are there in one square metre? If a blocklayer quoted you an "all in rate" of \$7.25 to supply and lay the blocks (including sundries) how much would you be charged for a wall that is 9.0 metres in length by 3.5 metres high?
- d) A Prime Cost Sum has been allowed for ceramic tile supply in a builder's tender sum. It is based on 85 square metres of tiles valued at a nominal figure of \$40.00 per square metre. If invoices received in respect to the tiling were, \$790.00 for the non slip floor tiles, \$2225.00 for the decorative wall tiles and \$250.00 for tile adhesive that was requested by the tiler, what would be the valuation of the Prime Cost Sum against actual money spent? Would the client or builder be owed money in this instance and why is this so?



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Question 4

(20 Marks)

Identify and discuss various market conditions which could influence the pricing of building works in any Australian city. Your answer should include at least five (5) market conditions with an explanation of how each might impact on the overall costing of a building project.

Question 5

(20 Marks)

Discuss only four (4) of the following questions 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 factors should building companies consider when tendering for a building project?
- b) What is the difference between tender documents and contract documents? Briefly discuss aspects involved in each.
- c) List 5 items you might find in the preliminaries section of a building estimate. Pick one of these preliminaries and discuss costing aspects that are particular to it.
- d) What do you understand by the term "cover price" in relation to a contractor's tender submission and why do you think this practice exists?
- e) Discuss the types of items that should be allowed for when pricing timber framing works noting any aspects that may need particular attention in its cost calculation.
- f) What could a Building Estimator allow if they were uncertain of the building work's requirements or the perceived risk associated with it. Discuss how they could apply this allowance and illustrate with an example.

END OF QUESTIONS