

**UNIVERSITY OF SOUTH AUSTRALIA
SCHOOL OF NATURAL & BUILT ENVIRONMENTS**

PROGRAMS: **Master of Project Management
Graduate Diploma in Project Management
Graduate Certificate in Building & Planning**

COURSE: **TIME, COST & QUALITY MANAGEMENT A (BUSS 5163)**

EXAMINATION: **Internal Exam, Semester 1, 2004**

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: **Mike Durand Tel – 0407 611 837**

INSTRUCTIONS TO CANDIDATES:

- This exam consists of 7 questions and you need to **answer only 5 questions.**
 - Each question carries 20%
 - No reference materials are allowed. Calculator is allowed
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Question 1

What are the objectives of value management? Discuss the concept of value management, its definition and the process usually followed. Describe how value management and value engineering can improve capital productivity and competitiveness of major projects. When is the best time in the life of a project to apply these practices? Give the reasons why.

Question 2

The financial success of a project depends on the project making a profit and also being able to finance the project throughout the project life cycle. As project manager you are responsible for the project accounts for a large project. Describe how you would address the following:

- a. Development of the cash-flow statement, identifying the expenses that would cause negative cash flow.
- b. Adjustment of the activities to improve the cash flow without unduly increasing the risk of lengthening the critical path.
- c. Invoicing work-in-progress.
- d. Estimating the cost to complete.

Question 3

- Describe the process of building the House of Quality. What departments and functions within the organisation should be involved in each step of the process?
- What are the principal benefits of Quality Function Deployment?
- What is Business Process Re-engineering? How does re-engineering relate to total quality practices?

Question 4

For the schedule of activities shown below:

- Draw a network, determine how long the project will take and determine the critical path.
- Assuming all activities commence on the earliest start date, what is the pattern of staff numbers required for each day throughout the project?
- By delaying the start of non critical activities and completing the project in the time determined in Question 4a above, determine the maximum number of staff required.
- If the maximum number of staff available is 10, what is the minimum number of days in which the project can be completed?

Activity	Depends on	Duration (Days)	Staff Required
A	Start	3	6
B	A	2	7
C	B	1	10
D	C, H	3	5
E	D, I	3	4
F	E	1	4
G	Start	2	5
H	G	6	5
I	H, M	1	7
J	G	2	5
K	J	4	10
L	Start	2	7
M	L	2	7

Question 5

- Briefly summarise the key elements of the quality system ISO9001:2000. Why do companies pursue ISO 9001 certification and what are the benefits of obtaining certification?
- Identify the relationship between Total Quality Management (TQM) and Quality Assurance (QA) and discuss how the two can support each other.

Question 6

The earned value technique integrates cost and time to give the project manager an indication of the schedule and cost status for a project. You are the project manager of a major project which requires 200 drawings. Describe how you will plan, track and control the drawing office activities using the earned value technique. Consider the following:

- a. The plan for Budget at Completion (BAC) and the Budgeted Cost of Work Scheduled (BCWS) curve.
- b. Methods for determining percentage complete.
- c. Data capture for Budgeted Cost of Work Performed (BCWP) and Actual Cost of Work Performed (ACWP).
- d. Earned Value reporting tables and curves.
- e. Control of variances.

Question 7

- a. Describe what is meant by 'Critical Chain'. How does it work?
- b. The construction a house is planned to take 8 months and cost \$150,000. At month 4 the earned value is 40% of the budget and the actual cost incurred is \$75,000. Calculate the cost and schedule variances. Will the client be pleased or unhappy?
- c. What are some of the limitations of the Critical Path Method of planning and control, and the Earned Value technique of monitoring progress and costs?

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