

The University of Melbourne

Semester Two, 2005

Faculty of Architecture, Building and Planning

Subject Number: 702-316

Subject Title: Management of Construction 3

The student is to write the student's number on the examination answer booklet.

Exam Duration: Three (3) hours

Reading Time: 15 minutes

This paper has 3 pages

Authorised materials:

Electronic calculators

Instructions to Invigilators:

Standard script books only required.

Exam paper may be removed from the examination room.

Instructions to students:

Answer **FIVE (5)** questions.

All questions are of equal value.

Start each question on a new page.

Clearly state any assumptions that you make in answering any questions.

Paper to be held by Baillieu Library

Paper to be held by Architecture Library

QUESTION 1

You are the construction manager for a multi-storey building comprising two basement floors for carparking, two podium floors for retail and consulting premises and a tower of 20 office floors. Outline your approach to preparing a work breakdown structure.

QUESTION 2

You have experienced a delay in a construction project due to a long period of inclement weather. The proprietor requires that the building be completed at the original date for practical completion. How would you go about compressing the project to meet the original completion date? What steps would you take to shorten the critical path in a construction project?

QUESTION 3

Discuss risk management in the context of a construction schedule. What are the risks associated with the schedule. An activity on your schedule that is not on the critical path is found to have a number of significant risks that may affect its start date and duration. How would you make allowances for that item in your schedule?

QUESTION 4

What are the main elements of a risk management system? Explain how such a system assists in the efficient operation of a building project.

QUESTION 5

List and discuss the main activities undertaken by a project manager to control project costs during the construction period. What do you do when you find that the actual cash flow is at variance from the planned cash flow?

QUESTION 6

You are working on the construction of a highway bridge. The project has a schedule of rates contract. The project was tendered as 12 items as follows:

Item	Description	Unit	Estimated quantity	Unit price	Estimated amount
1	Excavation unclassified	M ³	1667	\$2.40	\$4,000.80
2	Excavation structural	M ³	120	\$23	\$2,760
3	Backfill compacted	M ³	340	\$8.50	\$2,890
4	Piling steel	M	2,240	\$23	\$51,520
5	Concrete footings	M ³	120	\$80	\$9,600
6	Concrete abutments	M ³	280	\$162	\$45,360
7	Concrete deck (250mm)	M ²	200	\$68	\$13,600
8	Steel reinforcing	Tonne	198	\$900	\$178,200.
9	Steel structural	Tonne	144	\$750	\$108,000
10	Bearing plates	Tonne	7	\$4,500	\$31,500
11	Guardrail	M	120	\$43	\$5,160
12	Paint	PCsum	item	\$5,407	\$5,407
			TOTAL		\$457,977.80

The project commenced in September 2005. The amount of work completed by the end of October 2005 was:

Item	Quantity
1	1667
2	120
3	102
4	2240
5	120
6	140
7	0
8	81
9	0
10	0
11	0
12	0

The contract requires you to submit your progress claim on the 1st day of the month. Your progress claim for 1st October was \$1,550 which was paid before the end of October. Retention is 10% of the amount due and will be deducted from each progress claim. There are no materials stored on site. Calculate the progress claim for the month of October to be submitted on 1st November

END OF EXAMINATION PAPER