

THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF CIVIL ENGINEERING
CONSTRUCTION MANAGEMENT PROGRAMME - LEVEL 7
POST GRADUATE DIPLOMA / STAND ALONE COURSES



020

Final Examination - 2007/08

CEX 7108/CEE 7108 - Cost Control and Cash Flow in the Construction Industry

Time Allowed : Three Hours

Date: May 3rd 2008

Time : 0930-1230 hrs.

Select Section A and any three (3) questions from Section B and answer a total of four (4) questions. Q1 (Section A) is compulsory, and carries 40 marks. You are advised to spend about one hour on this question. Graph sheets will be provided.

SECTION A

Q1. Compulsory (40 marks)

A Water Supply Scheme costing Rs. 90M is to be constructed by a civil engineering Contractor, who has submitted a programme as shown in Table 1.

The value of work contained in each activity has been calculated from the rates contained in the Bill of Quantities and listed in Table 1.

Table 1.

Activity	Duration (months)	Value (Rs. M)	Starting Time (month) Start at beginning of the month
1. Intake well	3	8	1
2. Intake pump house	3	4	2
3. Pumping main	2	8	1
4. Aerator	2	4	2
5. Treatment plant	7	16	2
6. Elevated water tank	4	12	4
7. Clear water pump house	3	6	6
8. Clear water pumping main	2	32	6

Given below are the conditions with respect to the project.

- (i) A 20% mobilization advance is given at the start and it is recovered from the first four interim certificates in equal amounts.
- (ii) The gross profit margin is 10% of the contract value.
- (iii) Retention is 10% of the bill value up to a maximum limit of 5% of the contract sum.
- (iv) Half the retention is paid on practical completion and the remaining half 6 months later
- (v) Rate of work throughout any activity is uniform
- (vi) All costs are met at the instant they are incurred.

(a) Prepare cumulative Cash-Out Vs Time and cumulative Cash-In vs Time graphs on the same sheet.

(20 marks)

(b) Calculate the maximum amount of cash the contractor needs to execute this contract and the time of requirement.

(10 marks)

(c) Comment on the cash flow pattern and discuss possible ways of improving the Cash flow to reduce capital lock-up.

(10 marks)

SECTION B – Answer any three questions

Q2.

As the assistant to the Project Manager you are to improve the effectiveness of 'Cost Control' on a multi-storey building construction site.

(a) Explain 'Cost Control' as a total concept for the above project.

(10 marks)

(b) What are the points to be considered when designing a good cost control system?

(10 marks)

Q3.

(a)

Contractors do cash flow forecasting at the 'Estimating and Tendering' stage of a project and at 'Company Level'.

Describe the significance of each type of forecast for a construction company.

(10 marks)

(b)
Many Civil Engineering Contractors have been declared bankrupt although they have reported profit on their business operations. Explain how this can be possible. (10 marks)

Q4.

(a)
Explain the importance of the Value Engineering concept at the design stage, with reference to Cost Control of a fly-over to be constructed for an existing road. (10 marks)

(b) Describe in detail the types of 'monitoring' and 'information' systems you would implement on a construction site. (10 marks)



Q5.

(a)
Discuss the significance of 'Performance Ratios' in measuring a project's performance with regard to **time, cost and production**. (10 marks)

(b)
Discuss the use of 'Cost Centres' and 'Cost Codes' for operating a cost control system. (10 marks)

Q6

(a)
Explain the function of the 'Sensitivity Analysis Technique' when performing a cash flow forecast for a construction project. (10 marks)

(b) Outline in detail, the objectives of cash flow forecasting for Clients and Contractors. (10 marks)