

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



Final Examination - 2014/15

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

Time Allowed : Three Hours

Date: 03rd September 2015

Time: 0930-1230 hrs.

This paper consists of six questions.

Answer a **total of four (4)** questions including **Q1** and any three (3) questions from **Section B**

Section A (Q1) is compulsory and carries 40 marks.

You are advised to spend about one hour on this question. Graph sheets will be provided.

SECTION A - Compulsory (40 marks)

Q1.

A Water Supply Scheme costing Rs. 180M 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	16	1
2. Intake pump house	3	8	2
3. Pumping main	2	16	1
4. Aerator	2	8	2
5. Treatment plant	7	32	2
6. Elevated water tank	4	24	4
7. Clear water pump house	3	12	6
8. Clear water pumping main	2	64	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) Based on the construction programme, the distribution of value of work, distribution of calculated cost of work and other given data, prepare a cash flow forecast. (20 marks)
 - (b) Draw the cumulative Cash-Out Vs Time and cumulative Cash-In vs Time graphs on the same sheet. Indicate the maximum amount of negative cash 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 (03) questions

Q2.

- (a) Explain the importance of value vs time graphs at the pre-contract phase of a project. (05 marks)
- (b) Discuss possible action to be taken at the pre contract stage regarding the control of cost during the construction of a project. (15 marks)

Q3.

- (a) Explain the term 'capital lock-up'. Name two factors which can affect capital lockup and explain their effect on the cash flow. (08 marks)
- (b) Explain the functions of the contracting party involved in Cost Control at the construction stage of a medium scale project. (12 marks)