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



Final Examination - 2009

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

Time Allowed : Three Hours

Date: 18th March 2010

Time : 0930-1230 hrs.

Answer 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 Construction company has won the contract for the construction of a supermarket complex for which the project investment cost is Rs.100 Million.

The construction period is 18 months. The standard industry data for construction of the building are available and are as follows:

Table 1.1
Standard industry data for construction.

Time (months)	Cumulative value (Rs. Million)
1	3
2	8
3	12
4	16
5	23
6	29
7	35
8	42
9	50
10	60
11	70
12	78
13	86
14	90
15	94
16	97
17	99
18	100

Retention is 10% of contract sum. Retention will be released 6 months after completion.

Advance payment is 20%.

Recovery of advance payment will be made in four equal installments beginning from the second month.

Profit margin is 10% of value.

Contractor is paid monthly with a payment delay of one month.

All cost liabilities are assumed to be met by the contractor without any payment delay.

You are required to

- (a) Prepare a cash-flow forecast for the project construction work (15 marks)
- (b) Draw the 'Cash in' and 'Cash out' graphs on the same sheet (05 marks)
- (c) Does the project require any financing? If so, what is the maximum amount required and at what time does this occur? (05 marks)
- (d) Discuss the implications on the cash flow with method of advance payment recovery as per Standard Bidding Document, Procurement of Works by ICTAD. (07 marks)
- (e) Explain the advantages of using standard data curves for construction (as given in this question in table 1.1). If the standard curve is not given what is the required information to derive the 'value' vs 'time' curve and how will you derive it? (08 marks)

SECTION B – Answer any three questions

Q2.

- (a) Outline the importance of cash flow forecasting for a construction project. (08 marks)
- (b) Some of the main factors that affect a contractor's cash flow of any particular contract could be considered as the following;
Profit Margin, Rate Loading, Credit Facilities and Advance Payment Conditions.
Describe the effect of each of these factors on a contractor's cash flow & comment on the influence the contractor has on each factor. (12 marks)

Q3.

- (a) Explain how the Cost Curve and the Production Curve can be used as Performance Models in cash flow forecasting. (10 marks)
- (b) Many site control and monitoring systems do not involve any examination of the commercially effective use of construction materials. Give reasons for this and describe possible systems and actions that might be implemented to minimize the cost of materials in a project. (10 marks)

Q4.

(a) Explain the significance of 'claims' in cash flow forecasting of construction projects. Discuss measures taken in improving the cash flow through settlement of claims.

(10 marks)

(b) When calculating variances at the end of six months on a building construction project, it is found that there is an adverse variance for the item 'construction labour'. Identify possible reasons and discuss remedial measures for the future.

(10 marks)

Q5.

(a) List items in a feasible design brief and discuss how you could minimize the overall cost of construction of a lecture room for 200 students, by making use of the Value Engineering concept at the design stage.

(10 marks)

(b) Discuss the cost cutting measures that can be taken on construction sites and possible effects on quality.

(10 marks)

Q6.

Discuss the following.

(a) "Unit Costing System of Cost Control"

(08 marks)

(b) Corporate Cashflow of a Company.

(06 marks)

(c) 'Cost' of a Cost Control System

(06 marks)