

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



Final Examination – 2008/09

CEX7101 - Planning and Control in the Construction Industry

034

Time Allowed: Three Hours

Date: 14th March 2009

Time: 0930-1230 hrs.

Section A and Section B consist of three questions each.

Select **two (2) questions from each section** and answer a **total of four (04) questions**.

Section A

Q1.

(a) At times of low demand for construction, it is important for contractors to remain without going bankrupt. Name the different sectors of the economy and outline how the Ministry of Construction can intervene to ensure that sufficient workloads are available for contractors in the different sectors of the construction industry.

(15 marks)

(b) Discuss 'Appropriate Technology' in the present context of the construction industry in Sri Lanka.

(10 marks)

Q2.

(a) "The success of planning and control is dependant on the techniques used and on the company's organizational structure."

Based on the above statement, briefly outline the different techniques that can be used for planning a multi-storey building construction project. Indicate advantages and disadvantages.

(15 marks)

(b) Draw a suitable detailed organizational structure for successful completion of the above project.

(10 marks)

Q3.

(a) The ICTAD has initiated policies and regulations to strengthen Construction Contractors. Summarise the decisions which have been taken to help Local Contractors to obtain work in the presence of Foreign Contractors and discuss the impact of these decisions on the local contractors, suggesting possible improvements.

(13 marks)

(b) Survival of construction contractors is a major issue in Sri Lanka. State and explain three major reasons for the survival issues to arise and discuss how they can be addressed.

(12 marks)

Section B**Q4.**

Given below are the activities for a construction project.

Table 4.1

Activity	Description	Duration (days)	Preceding activity
A	Clear & grub	2	-
B	Cut & fill	5	A
C	Excavation & form culvert	2	A
D	Place base	3	B
E	Construct culvert	2	C
F	Pave	3	D,E

- (a) Draw the activity-on-arrow diagram and the activity-on-node diagram for completion of the project. Tabulate the activity times and indicate the critical path in both types of network diagrams. If activity B (cut & fill) can start when activity A (clear & grub) is 50% complete, illustrate how this situation can be represented in both conventional CPM (activity-on-arrow) and precedence (activity-on-node) diagram. (06 marks)
- (b) Name the common types of planning techniques used in the construction industry. State the factors to be considered when selecting a planning technique for a construction project (05 marks)
- (c) Compare the use of CPM networks and Line of Balance schedules for construction projects and discuss their suitability for projects (08 marks)
- (d) Discuss how you would set about drawing a network diagram for the successful completion of a project, where the number of activities exceed 30. (06 marks)

Q5.

- (a) Explain the function of Progress Control through three of the common techniques used for preparing work programmes, in achieving the main objectives of Project Management. (09 marks)
- (b) Compare and contrast the use of the Value Curve Method and the Milestone Completion Method for Progress Control of a highway construction project, using relevant illustrations. (10 marks)
- (c) Illustrate, the different formats of presenting progress information. (06 marks)

Q6.

Write short notes on any four of the following:

- (a) Discuss the points to be taken into consideration in preparing an inventory of the construction sector in Sri Lanka.
- (b) Discuss the difference between 'resource allocation' and 'resource aggregation'
- (c) Desirability of using 'Work breakdown structures & Work packages' in the management of construction projects
- (d) Discuss the use of CPM techniques as an aid in Estimating & Tendering
- (e) Discuss the use of CPM and Bar Charts for a bridge construction project

(6.25 marks each= 25 marks)