

THE OPEN UNIVERSITY OF SRI LANKA
Post-graduate Diploma in Construction Management
Final Examination – 2009
CEX 7109–Management of the Design Phase & Quality Control



Duration: **Three Hours**

Date: 20th March 2010 (Saturday)

Time: 1330 – 1630 hours

Answer four (4) questions, selecting at least one (1) question from section B.
Please write the answers to SECTIONS A and B in TWO SEPARATE BOOKS.
Note: Relevant field examples may be used to support your answers.

SECTION A

Q1

- a) Conformity with defined requirements, fitness for the purpose and customer satisfaction may be considered to be inherent characteristics of 'Quality'.

On the basis of this, in order to improve quality, *discuss* the functions of the following:

- i) The Conceptual Design stage (9 marks)
ii) Cost planning (9 marks)
- b) *Explain* what you understand by 'Specifications' and briefly explain the different types of specifications used, *giving examples* of their use. (7 marks)

Q2.

- a) A client's financial policy favours the 'lowest first cost' for a project: *Explain* what is meant by this option. Also explain the work and output required of the design team and implications for the client's time policy. (9 marks)
- b) *Discuss* the function and objectives of a Design Review and the stages of a project at which they should be conducted to ensure that their outcome helps to improve the quality of the project. (9 marks)
- c) *Describe* the procedure for evaluation of tenders for a construction contract. (7 marks)

Q3

- a) *Discuss* briefly the main functions of the different stages of design, the evolution of the consolidated brief and its objectives. (9 marks)
- b) *Explain* 'Life cycle costs' and how you would adapt it to gauge the sustainability of a development project. (8 marks)
- c) *Discuss* the circumstances which would favour a Design and Build contract and the specifications and requirements that should be included in the Client's brief to ensure that client interests are met. (8 marks)

Q4.

- a) *Discuss* the function of Verification and Validation procedures and factors that would affect how their timing and frequency are decided. (9 marks)
- b) *Discuss* the procedure for a Quality and Cost Based Selection of consultants for a major project and the evaluation criteria you would set. (8 marks)
- c) *Discuss* the objectives and ethics of Procurement and its impact on a project's quality, cost and timely completion. (8 marks)

SECTION B

Q5.

- a) Decisions taken in the early stages in a project life cycle are said to have greater potential to influence the outcome of the project than those taken in the later stages. *Clearly discuss* the validity of this statement using relevant examples. (9 marks)
- b) *Explain* the purpose of Document Control in a quality management system and the document control required for the Project specific documents during the design and construction stages. (8 marks)
- c) *Describe* the different types of quality costs and *explain with suitable examples* how the implementation of a quality management system would reduce the total cost of quality. (8 marks)

Q6

- a) The SLS ISO 9001 indicates procedures for the Control of Design and Development Changes. *Explain* the basic procedures needed for management of change during the design and construction phases of a project, *discussing with examples* from your field of engineering, (8 marks)
- b) A contractor who has implemented a quality management system to ISO 9001 in his organization should develop a Quality Plan for each and every project undertaken. *Briefly describe* what quality assurance activities the company should carry out during the following stages:
- (i) Prior to submission of a tender
 - (ii) Prior to accepting the contract awarded to the company
 - (iii) After the contract has been awarded but prior to the commencement of construction work. (9 marks)
- c) In quality assurance, non-conformances found during inspection and testing activities should be corrected by appropriate action. *Describe* the type of actions that need to be taken and how this would improve the quality of construction work; use suitable examples to support your answer. (8 marks)