

THE OPEN UNIVERSITY OF SRI LANKA
Post-graduate Diploma / Stand alone Courses in
Construction Management
Final Examination – 2005
CEX 7109 / CEE 7109 / CEP 2109 – Management of the
Design Phase & Quality Control
Duration: **Three Hours**



010

Date: Tuesday 28th March 2006

Time: 0930 – 1230 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.

SECTION A

Note: Use relevant field examples where necessary to clarify your answers.

1. a) *Discuss three* of the possibilities open to a client in terms 'financial policy', briefly commenting on their effect on the time of completion. (10 marks)
- b) *Discuss* the criteria considered in the ICTAD guidelines for grading and registration of contractors undertaking work in your field of engineering noting any comments you may have regarding them. (9 marks)
- c) *Briefly explain three* risks considered in the Risk Analysis carried out before determining the final choice of contractor. (6 marks)
- 2 a) Customer satisfaction is an important aspect of quality.
Discuss three client-requirements that should be discussed and clarified with the client in developing the consolidated brief and their impact on the management of the design phase of the project. (10 marks)
- b) QA may be considered as a systematic approach towards prevention of failure rather than detection, identifying root cause(s) and taking corrective action.
Discuss two main deficiencies in the tender documents submitted in your field of engineering and how these need to be addressed by Consultants. (9 marks)
- c) *Explain* briefly what you understand by 'comparative cost planning' (6 marks)
- 3 a) *Briefly discuss three* objectives of the conceptual stage of a project design. (6 marks)
- b) *Explain two* functions of Design reviews and stages at which they should be held. (8 marks)
- c) *Describe two* basic methods of specifying materials and equipment and give an appropriate example of the use of each. (5 marks)
- d) Explain the following terms in relation to the conditions of consultancy agreements:
 - i) Skill, Care and Diligence of services of the consultant
 - ii) Obligation of the Client with regard to Data and Approvals. (6marks)

4. a) *Discuss* whether you agree that 'Quality, (regarded as conformity with defined requirements, customer satisfaction), starts with the designers' and hence the cost and quality of a project are determined in the early stages of a project. (9 marks)
- b) *Explain* what you understand by 'Life cycle costing' and *briefly discuss* how it could be adapted to gauge a project's rating with regard to 'sustainable development' and long-term environmental impact. (9 marks)
- c) *Explain* what you understand by *unbalanced* bids and briefly describe the procedure for evaluation of unbalanced bids. (7 marks)

Section B

- 5 a) Quality planning is a crucial step in managing quality at construction stage. It should be done well before the construction work is commenced. If you are the Project Manager of a construction project undertaken by an ISO Certified construction company, briefly describe how quality planning would be done and the contents of the 'project quality plan'. (7 marks)
- b) It is known that materials used for construction determine the quality of the works to a great extent. Identify the relevant requirements in the ISO 9001 standard that could be used to assure quality of materials and the works. Give examples to illustrate your answer. (8 marks)
- c) The Consultant plays a major role in determining the quality of any construction work. Describe how he can assure and control quality of construction work at both design and construction stages. Also, discuss whether the provisions given in ICTAD Conditions of Contract are adequate for managing quality at construction stage; if not what are the improvements required? (10 marks)
- 6 a) Discuss the fundamental differences between a consulting organization and a construction company with respect to the application of the ISO 9000 standards. (6 marks)
- b) Briefly describe following quality management approaches:
(i) Quality Control
(ii) Quality Assurance
(iii) Total Quality Management (6 marks)
- c) Describe different types of quality costs. Explain with suitable examples how the implementation of a quality management system would reduce the total cost of quality. (7 marks)
- d) Taking corrective and preventive actions is an important requirement in a quality assurance system. Describe using suitable examples the difference between corrective action and preventive action with respect to the ISO 9000 requirements. (6 marks)