THE OPEN UNIVERSITY OF SRI LANKA
Bachelor of Technology - Level 4
CEX 4238 - Quantity Surveying
Final Examination - 2015/2016
Time Allowed 3 hours

Date: 18th November 2016 Time 9.30 a.m. - 12.30 p.m.

Answer **any five** questions. All questions carry equal marks. Write down your Index Number clearly on the answer script.

If you have answered more than five questions (either partly or in full), cross out the extra answers. Otherwise, only the first five answers appearing in the answer book will be evaluated.

Q1. A civil engineering project is a series of related jobs, directed towards a major pre-planned output, requiring a significant amount of time to perform.

(i) List down the members of a building project team to implement a new project and discuss the responsibility of each member of the design team? (5 marks)

(ii) State the primary functions of a Quantity Surveyor in the construction stage of a building project. (5 marks)

(iii) Identify the role of the contractor, consultant and the employer. (5 marks)

(iv) Describe two main methods of tendering used for Civil Engineering works. (5 marks)

Q2. (i) Discuss three reasons for the final cost of a project to become unnecessarily high and how this can be avoided. (5 marks)

(ii) Explain the concept of Coordinated Project Information and how it helps to resolve discrepancies in contract documents. (5 marks)

(iii) Discuss the data needed to calculate the cost of uncoursed rubble stone masonry in foundation and plinth. (5 marks)

(iv) Explain the long and short wall method and center line method of measuring the length of wall for a building for computing the quantity of different items of work. (5 marks)

Q3. There are two classes of plant used in construction projects:
small and non-mechanical plant and tools, and power driven mechanical plant.

(i) Explain how the plant hire is calculated for the above two categories of plant. (4 marks)

(ii) Discuss the advantages and disadvantages of owning plant and equipment. (4 marks)

(iii) Explain the straight line depreciation method. (4 marks)

(iv) The original cost of a sheeps foot roller is Rs. 7200000/=. It has a useful life of 10 years based on usage of 1500 hours per year and a salvage value of Rs. 2000000/=. Find the cost of depreciation per hour and the book value after 5 years. (4 marks)

(v) A power shovel with a $1m^3$ dipper is capable of handling 2 dippers per minute under ideal conditions. However, in a particular job, the average value per dipper is $0.85m^3$ and the shovel operates effective for only 50minutes per hour. Calculate the average output. (4 marks)

Q4. Specifications specifies or describes the nature and the class of work, materials to be used in the work, workmanship etc., and is very important for the execution of construction work.

(i) Draft specifications for the following: (5 marks)
   (a) Damp Proof Course
   (b) Painting of old steel work

(ii) State the necessary requirements that should be included in a performance specification and prescriptive specification provided to the contractor for the required concrete. (5 marks)

(iii) List basic properties that you would specify in order to purchase the following items: (5 marks)
   (a) G.I pipes for carrying water
   (b) Doors for a dwelling house

(iv) Calculate the discounted value of Rs. 500,000/= receivable in the 9^{th} year at discount rate of 13%. (5 marks)

Q5.

(i) Unit Rate Estimating methods are used for preliminary checking of the economic feasibility of a construction project. Describe the following two methods of estimating and their use, with examples for illustration. (12 marks)
   (a) Cost per unit area and cost per unit volume
   (b) Cost per place

(ii) Elemental Cost Planning and Comparative Cost Planning are two methods of Cost Planning adopted in practice. Describe each. (8 marks)

Q6.

(i) Designers and Quantity Surveyors are generally aware of the cost implications of design variables. Discuss the impact of the "shape" of a building on the construction cost and the running cost of the structure. (10 marks)

(ii) State the factors affecting the shape of a building and discuss how to arrive at a nominal solution regarding the orientation of a building taking into consideration Cost, Functionality and Aesthetics. (10 marks)

Q7.

(i) State the basic requirements of a "Contract in Law" (06 marks)

(ii) Describe the following types of contracts and their usage.

(a) Bill of Quantities or Fixed Price with Quantities

(b) Schedule of Rates (14 marks)

Q8.

(i) Explain the procedures for "Procurement" involving a bidding process. (10 marks)

(ii) State the steps to be taken to ensure "Quality" as per the ICTAD Conditions of Contract clauses 33, 34, 35, 36 and 59(e) (10 marks)

ICTAD- Institution for Construction Training & Development (presently Construction Industry Authority)