

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**FACULTY OF BUILT ENVIRONMENT**  
**DEPARTMENT OF QUANTITY SURVEYING**  
**PART II SECOND SEMESTER EXAMINATIONS – JUNE 2010**  
**BUILDING DESIGN ECONOMICS – AQS2210**

Time: 3 Hours

Total Marks: 100

**Instructions**

Answer ANY Four Questions. All Questions Carry Equal Marks.

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**QUESTION ONE**

Explain the following concepts and show their relevance to the construction industry

- a) Cost benefit analysis (7 marks)
- b) Feasibility study (6 marks)
- c) Sensitivity analysis (6 marks)
- d) Cost budgeting (6 marks)

**QUESTION TWO**

The design of a building often dictates the method of construction and materials to be used in the construction of that building. Identify any **five** building design variables and show their effect on the cost of a building. (25 marks)

**QUESTION THREE**

Prefabrication of building elements facilitated mass production of buildings to meet demand for shelter especially after the Second World War. Explain in detail 'system building' as a method of mass production of buildings showing its benefits to clients of the building industry. (25 marks)

**QUESTION FOUR**

Using examples, explain the process of cost planning. What importance is cost planning to a client of the construction industry. (25 marks)

**QUESTION FIVE**

A vacant and partially derelict deconsecrated church building in the centre of a large provincial town is being offered at \$ 2 500 000. A local property development company is interested in converting the building into a small specialty shopping centre on two floors. The reconstructed building will be approximately 3000m<sup>2</sup> gross in size providing about 2000m<sup>2</sup> of net lettable floor space divided into 18 units of between 50m<sup>2</sup> and 250m<sup>2</sup>. Rental income is predicted to average out at around \$300 per m<sup>2</sup>. An investment return of 7.5% is sought. Building costs are estimated at \$550 per m<sup>2</sup>. Bridging finance is available at 1.4 % per month and the development will probably take 21 months to complete and let. Developer's profit is set at 15% of capital value while professional fees are 12.5% of building costs.

On the basis of the above information and any other assumptions you may wish to make, prepare a development budget for this project, and advise the developer accordingly.

(25 marks)

#### **QUESTION SIX**

- a) Identify and explain what constitutes of 'total building cost' to a client of the building industry. (12 marks)
- b) 'Quantity surveyors do not control costs on construction projects'. Discuss (13 marks)