

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**FACULTY OF THE BUILT ENVIRONMENT**  
**BACHELOR OF QUANTITY SURVEYING (HONOURS) DEGREE**  
**PART II SUPPLEMENTARY EXAMINATION - 2012**  
**CONSTRUCTION ECONOMICS - AQS 2108**

Time: 3 Hours

Total marks: 100

**Instructions**

Answer any **four** questions.

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**Question 1**

- a.) Explain how governments can use the construction industry to regulate the economy. [13 marks]
- b.) Explain the importance of the construction industry to a nation. [12 marks]

**Question 2**

Discuss any four methods of investment appraisal commonly used in the construction industry. [25 marks]

**Question 3**

Life cycle costing is a theoretical concept that has no practical meaning in an unstable economic environment. Discuss [25 marks]

**Question 4**

- a.) Discuss the principle behind compounding and discounting when dealing with time value of money mechanics. [10 marks]
- b.) What is the amount of \$1250 for 5 years at 6% compounded quarterly? [5 marks]
- c.) A loan of \$5000 is to be repaid in equal monthly installments over the next 2 years. Determine the payment amount if interest is charged at a nominal annual rate of 15%. [5 marks]
- d.) How much money would it could you borrow if you agreed to pay back \$1000 at the end of each year for 5 years. The lender expects to earn 10% per year. [5 marks]

**Question 5**

A company with a cost of capital of 15% is considering investing in an investment with the following stream of cash flows.

Year	Cash flow (\$)
0	-20000
1	8000
2	7000
3	6000
4	5000
5	4000

- a) Calculate simple payback and discounted payback period(s) for the investment. [10 marks]
- b) Using IRR technique, is the investment acceptable. [15 marks]

**Question 6**

- a.) Two options are available for purchasing construction equipment. Assuming an interest rate of 15%, which option is more economic? Use the Annual Equivalent and the Present worth methods. [10 marks]

	Option 1	Option 2
Capital cost of equipment	\$8,500	\$9,500
Annual running cost	\$1,750	\$1,500
Life	5 years	5 years

- b.) Explain any three factors considered in determining replacement age of equipment [6 marks]
- c.) State any four factors that distinguish the construction industry from other manufacturing industries. [4 marks]
- d.) State any five factors to be considered before choosing an investment option [5 marks].