NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF CONSTRUCTION MANAGEMENT

CONSTRUCTION PROJECT FINANCE

BQS 4203

Main Examination Paper

December 2024

This examination paper consists of **five (5)** printed pages

Time Allowed:	3 hours
Total Marks:	100
Examiner's Name:	Mr. T. Dzimiri

INSTRUCTIONS

1. Answer **Question One** and any other **three (3)**.
2. Use of calculators is permissible.

MARK ALLOCATION

QUESTION	MARKS
1.	25
2.	25
3.	25
4.	25
5.	25
TOTAL	100

Question One (Compulsory)

a) Discuss the assertion "Debt is good; Debt is evil". [5 marks]

b) In order to augment funds ABC Construction intends to borrow from Anthony Microfinance. They feel that the company will not be able to repay anything for the first three years but, thereafter, the company is prepared to pay back $12 000 per year for five years. Anthony Micro Finance agrees to advance the company money at 15% per annum. Establish how much the company will be advanced under these conditions. [5 marks]

c) Mr Liberty is a 25-year-old financial director at Fernando Construction Company. Although he enjoys work, he wants to retire at 35 and start his construction firm. He estimates that he will need $120,000 to start and an additional $20,000 to pay for stock and preparation costs. Mr Liberty intends to make equal annual payments into a bank account on which he can earn 15% compounded quarterly.

   i) Calculate the amount that Mr. Liberty will have to pay annually to achieve his objective when he retires if the first payment is to be made at the end of the first year. [5 marks]

   ii) What amount must Mr. Liberty pay annually to achieve his objective when he retires, if the first payment is to be made at the beginning of the first year? [5 marks]

   iii) Instead of making equal annual payments, Mr Liberty wants to make one lump sum payment today,

investing it at 15% interest compounded semi-annually. What should this lumpsum be?   [5 marks]

[25 marks]

Question Two

The National University of Science and Technology wants to finish its Library and Chemical buildings, but they face a challenge in financing the projects. They have approached you to help them source the funds since you are an expert in the financing world. Discuss any **five (5)** strategies they can use to raise the funds.

[25 marks]

Question Three
NB: You are encouraged to show all workings

a)   Calculate the Net Present Value (NPV) for the following project; an outflow of $7,000 followed by inflows of $3,000, $2,500, and $3,500 at one-year intervals at a cost of capital of 7%.

a. $934.60

b. $844.35

c. $816.60

d. $944.35
                    [4 marks]

b)   Calculate the NPV for the following project with the following cash flows: an initial outlay of $35,400 followed by inflows of $6,500 for three years and then a single inflow in the fourth year of $18,000 at a cost of capital of 9%.

a. -$6,195.35

b. $6,500.13

c. -$6,895.16

d. $7,084.35
                    [4 marks]

c) Calculate the Internal Rate of Return (IRR) for the following project with the following cash flows: an initial outflow of $15,220 followed by inflows of $5,000, $6,000, and $6,500 at one year intervals.

a. 9%

b. 8%

c. 7%

d. 6%

[4 marks]

d) Calculate the IRR for the following project with the following cash flows: An initial outflow of $47,104 followed by inflows of $16,000, $17,000, and 18,000 at one year intervals.

a. 9%

b. -9%

c. 4%

d. 2%

[4 marks]

e) Calculate the NPV at a cost of capital of 9% and the IRR for a project with an initial outlay of $69,724 and an inflow of $15,000 followed by four consecutive inflows of $17,000 at one-year intervals.

a. -$5,437.29; 6%

b. $5,437.29; 4%

c. $5,437.29; 4.2%

d. -$5,427.29; 3.39%

[4 marks]

f) Calculate the NPV at a cost of capital of 9% and the IRR for a project with an initial outlay of $25,424 followed by two zero cash flow years and then four years of inflows at $10,500.

a. $3,239.70; 4%

b. -$3,239.70; 6%

c. $3,207.98; 9%

d. $3,207.98; 12%

[5 marks]

[25 marks]

Question Four

a)   You are evaluating Mwale's stock which is expected to experience supernormal growth in dividends of 10%, over the next 5 years. Following this period, dividends are expected to grow at a constant rate of 4%. The stock paid a dividend of $4 last year, and the required rate of return on the stock is 15%. Determine the fair price of the share.   [10 marks]

b)   Differentiate between call options and put options, referring to examples in the construction industry.   [15 marks]

[25 marks]

Question Five

a)   Danda (Private) Limited borrowed $10 000 000 in the fixed-rate market. To take advantage of favourable developments in the money market, the company now wants to convert its loan into a floating-rate loan. Fortunately, the bank advises you that Chaima (Private) Limited also wants to convert its $ 10,000 000 floating-rate loan into a fixed-rate loan

    i)   Calculate the gross savings   [2 marks]

    ii)   Calculate the net savings   [2 marks]

    iii)   Diagrammatically illustrate the swap using **both** interest rates.   [9 marks]

b)   Discuss how any **two (2)** investment appraisal techniques can be used in the construction industry using examples of your own choice.   [12 marks]

[25 marks]

END OF EXAMINATION