



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF THE BUILT ENVIRONMENT
DEPARTMENT OF QUANTITY SURVEYING
CONSTRUCTION FINANCE
BQS 4203

Supplementary Examination Paper

August 2024

This examination paper consists of four (4) printed pages

Time Allowed: 3 hours

Total Marks: 100

Special Requirements: NIL

Examiner's Name: Dzimiri T.

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

- a) Your company has \$100,000 to invest and has identified the following three investments. Investment A requires an initial investment of \$70,000 and an annual return rate of 15%. Investment B requires an initial investment of \$80,000 and an annual return rate of 21%. Investment C requires an initial investment of \$30,000 and an annual return rate of 29%. Unused funds will be placed in a bank account with an annual percentage rate of 5%. You may invest in each of the investments only once. All of the investments have a life of one year. Which investment should your company invest in?

[10 marks]

- b) Evaluate why construction financial management differs from other companies' financial management.

[15 marks]

Question Two

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

You are given the following information by the Bank:

	Fixed Rate	Floating
AB (Private)	9%	MNR + 0.6%
ZY (Private)	11%	MNR + 1 %

- AB prefers to borrow in the Fixed market.
- Bank commission 0.5% (shared equally)

Required.

- i) Calculate the gross savings. [2 marks]
- ii) Calculate the net savings. [5 marks]

iii) Diagrammatically illustrate the swap using **both** the interest rates. [6 marks]

b) Discuss how investment appraisal techniques can be used in the construction industry. [12 marks]

Question three

The National University of Science and Technology wants to finish its Library building and the Chemical building, 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 various ways you will assist them in raising the funds. [25 marks]

Question four

a) Given that a company has issued a bond for the construction of a new building having a face value of \$100,000, carrying an annual coupon rate of 9% to be paid semi-annually and maturing in 10 years. The market interest rate is 8%. Calculate the fair price of the bond. [7 marks]

b) Differentiate between a short forward position from a long future position referring to examples in the construction industry. [10 marks]

c) Cuthbert enters into a short forward contract to sell 600 bags of cement for US dollars at an exchange rate of USD/RTGs 1:20000. How much does Cuthbert gain or lose if the exchange rate at the end of the contract is:

i) USD/RTGs 1:27000 [4 marks]

ii) USD/RTGs 1:16000 [4 marks]

Question Five

You have been contracted by the City of Bulawayo, which plans to embark on the expansion of Luvuvu Road. The project is intended to reduce the

number of fatal accidents because the current dual lane cannot accommodate the increased traffic volume. The increased volume of traffic is attributable to the reduction in duty on imported vehicles. The expansion of the road is going to reduce the fatality rate by 50% from the current 30 lives a month. In addition, commuters will now get into the Bulawayo City Centre 90 minutes earlier every day than the previous 3 hours and 30 minutes they used to spend due to congestion.

You establish that most residents in Bulawayo are demanding \$7,500 per week to go and work in construction sites in Popoma, where 500,000 people are dying a day because of COVID-19. You further establish that instead of spending three hours in a queue to get a free food hamper enough to feed a family of seven for a month, most residents in Bulawayo prefer paying \$250.50 to get the hamper without queuing. The estimated cost of land is \$7000 per hectare and the road expansion will require the Bulawayo Town Council to purchase an additional 15 000 000 m². The construction of the road shall last three years at an annual cost of \$420,000. The taxi fare cost is currently at \$ 3.50 per trip. You are told that the benefits of the project are expected to accrue for five years following the completion of the expansion of the road and that, the real interest rate on long-term bonds is 5% per annum and inflation is 2% annually.

You are required to advise the Bulawayo City Council if it is worthwhile to undertake the expansion of Luveve Road. [25 marks]