BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT OF BANKING AND FINANCE

RISK MANAGEMENT AND DERIVATIVE SECURITIES (BS444/BS402)

3 HOURS (100 Marks)

INSTRUCTIONS TO CANDIDATES

1. **Answer any four questions.**
2. **All questions carry equal marks.**
3. **Credit will be given for grammatically well-constructed answers.**

QUESTION ONE

a) How do hedgers, speculators and arbitrageurs differ in their derivative trading strategies? (5)

b) Segen Ltd is planning to go into a gold mining project in Bindura close to the suburb of Chiwaridzo. There are a number of issues to be addressed before the project takes off. You have been hired as a financial consultant.

Required:

Outline any five potential risks that the firm is likely to be exposed to in this project and explain how each one of them can be mitigated. (10)

c) Discuss the challenges in establishing a derivative market in Zimbabwe. (10)

[25 Marks]

QUESTION TWO

a) How can foreign exchange risk be mitigated in an export oriented firm? (3)

b) The price of gold is currently \$500 per ounce. The forward price for delivery in one year is \$700. An arbitrageur can borrow money at 5% per annum. What should the arbitrageur do? Assume that the cost of storing gold is zero and that gold provides no income. (5)

c) Explain any two ways that executives can be a source of risk in an oil exploration project in Muzarabani. (4)

d) Explain six ways one can apply risk management successfully in a project. (6)

e) 'Company treasurers should not hedge. They will be blamed when a loss is experienced on the position taken in the hedging instrument.' Discuss this viewpoint. (7)

[25 Marks]

QUESTION THREE

a) Why is an option analogous to an insurance policy when used for hedging in a developing economy? (3)

b) Outline the techniques of risk analysis. (5)

c) 'Forward contracts are often confused with futures contracts because of some similar economic functions.' Explain the similarity in the context of financial risk management. (3)

d) Explain the major challenge that has been brought about by advances in Information Technology (IT) in financial services. (4)

e) Consider a forward contract on a non-dividend-paying stock that matures in three months. Suppose that the stock price is $40, and the three-month risk free rate of interest is 5%.

   i) What would be the delivery price in a forward contract negotiated today? (3)

   ii) What action can be taken by the investor if the forward price is greater than the delivery price? (2)

f) With reference to a developing country, explain how inflation affects financial planning in risk management and estate planning. (10)

[25 Marks]

QUESTION FOUR

a) With reference to a plantation project explain the standard risk management process. (6)

b) What is the price of a European call option on a non-dividend-paying stock when the stock price is $52, the strike price is $50, the risk free interest rate is 12% per annum, the volatility is 30% per annum, and the time to maturity is three months? (5)

c) How can technology pose risks to a cotton-weaving project? (4)

d) Considering different types of credit models, how can credit risk be managed in a microfinance institution? (10)

[25 Marks]

QUESTION FIVE

a) How can resources affect the risk profile of a diamond-mining project? (4)

b) During the execution of a project, a risk is identified by a team member. This newly identified risk is currently not in the Risk Register.

   Required:

   As a Project Manager, explain the action you would take after being notified of the risk. (6)

c) From a financial management perspective, describe the three main theories of the term structure explaining how they apply to investments in developing economies. (10)

d) Explain any three ways stakeholders can be a source of risk in an expansion project of Kariba Dam. (5)

[25 Marks]

QUESTION SIX

a) How can risk management benefit a chrome mining corporation operating in Zimbabwe? (7)

b) Give five examples of the options embedded in a project of a well-diversified multinational company. (5)

c) Explain how the standardized features in a futures contract different from the rest of the derivative securities. (4)

d) Under what circumstances are the following strategies appropriate in derivative trading:
   - i) a short hedge? and (2)
   - ii) a long hedge? (2)

e) Explain why an American option is always worth at least as much as a European option on the same asset with the same strike price and exercise date. (5)

[25 Marks]

END OF EXAMINATION