Faculty of Applied and Health Sciences
Department of Mathematics & Physics

UNIVERSITY EXAMINATION FOR:

MATHEMATICS AND FINANCE

UNIT: BFI 4205 FINANCIAL MODELLING

END OF SEMESTER EXAMINATION

SERIES:DECEMBER 2024

TIME:2HOURS

DATE: Pick Date2024

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attemptquestion ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE (COMPULSORY)

a) There are many steps in the preparation of a merger model. Discuss any three. (10 mks)

b) It is prudent for every organization to prepare a budget. State its purposes. 10mks

c) An enterprise has a capital structure consisting of 60% equity and 40% debt; its cost of equity is 15% and the cost of debt before tax is 20 %. Required. Calculate the company's weighted cost of capital then explain how it is used. (5mks)

d) Assume a portfolio comprised of the following four stocks:

Stock A: Shs 400,000 with an expected return of 8%.
Stock B: Shs 200,000 with an expected return of 7%.
Stock C: Shs 500,000 with an expected return of 10%
Stock D: Shs 600,000 with an expected return of 12%
Obtain the expected rate of return. (5mks)

Question 2

a) Discuss the components of mean – variance analysis. (6mks)
b) Explain why companies aim at an optimal capital structure? (5mks}
c) A system is studied through the use of a simulation model. What is a simulation model and what are its advantages? (10mks)

Question3

a) Who is a goal seeking Entrepreneur? (5mks)
b) Valuation is an important exercise since it can help identify mispriced securities or determine what projects a company should invest in. Discuss the main reasons for carrying out a valuation. (10mks)
c) Explain the term sensitivity analysis. (5mks)

Question 4

a) Using your own hypothetical example, explain the difference between Discounted Cash Flow and Net Present Value. (10mks)
b) Discuss the different financial models used in financial forecasting. (10mks)

Question5

a) The solution for minimizing risk is to diversify the investment portfolio. Discuss this statement. (10mks)
b) Discuss the term sensitivity analysis (10mks)