
TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences

Department of Mathematics & Physics

UNIVERSITY EXAMINATION FOR:

MATHEMATICS AND FINANCE

UNIT: BFI 4205 FINANCIAL MODELLINNG

SPECIAL/SUPPLEMENTARY EXAMINATIONS

SERIES: JULY 2025

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. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE (COMPULSORY)

- a) Discuss the uses of a simulation model (6mks)
- b) Goal seeking is one of the tools used in "what-if analysis". Discuss this statement (5mks).
- c) Discuss the main company valuation approaches. (9mks)
- d) The income statement for 2021 shows the following information. Sales shs 1.2m, cost of goods sold shs 0.8m, expenses shs 0.3m, dividends 1%, corporation tax 35%. The company had a loan of 0.5m and pays 0.1m at the end of each year. The interest on the loan was at 10% per annum.
Every year there was an increase of 10%, 5% and 8% on sales, cost of sales and expenses respectively. Required. Prepare a model to show the amount of earnings for the year 2021, 2022 and 2023. (10mks)

Question 2

- a) What is the importance of having a portfolio? (5mks)
- b) You have been approached by the management of Company XYZ Ltd. to value the Company. Briefly explain the different approaches that you could use to carry out this valuation. (10mks)
- c) Show any five ways in which Executives use financial models. (5mks)

Question 3

- a) Discuss a three stamen model and an IPO model (10mks)
- b) Highlight the different steps you would follow when using the goal seeking software. (10mks)

c) Question 4

- a) Discuss the factors of a good financial model. (10mks)
- b) Explain why it is important for the analyst to understand the mechanics of creating the data table. (10mks)

Question5

- a) What is optimization? (2mks)
- b) Use a hypothetical situation and show how you can optimize it (8mks)
- c) Define the following terms, securities, bonds, Net present value, risk, discounting. (10mks)