TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF BUSINESS

ACCOUNTING AND FINANCE DEPARTMENT

COURSE/CLASS: **BACHELOR OF COMMERCE**
FOURTH YEAR SEMESTER I AND II

UNIT : **BMS 4304**

UNIT NAME : **FINANCIAL FORECASTING AND MODELLING**

SERIES : **MAY 2016**

TIME : **2 HOURS**

INSTRUCTIONS TO CANDIDATES:

Answer Question One (Compulsory) and any other TWO questions.

QUESTION 1 (COMPULSORY)

Langa Langa Ltd.

A summary of the financial statements for the year to 31 December 20X2 is set out below:

SUMMARIZED INCOME STATEMENT FOR THE YEAR TO 31 DECEMBER 20X2

	Sh.000
Revenue	3,744
Cost of sales	2,280
Gross profit	1,464
Operating expenses	780
Interest	72
Tax liability	200
Net Profit	412
Dividends declared	163

SUMMARIZED BALANCE SHEET AT 31 DECEMBER 20X2

	Sh.000
Non-Current Assets (net book value)	1,800
Current assets:	
Inventory	782
Receivables	460
Cash and bank	166
	3,206
Current liabilities:	
Trade payables	324
Other payables (including dividends)	163
Financing:	
Ordinary share capital (ordinary shares of Sh.1 each)	1,200
Retained profits to 31 December 20X1	550
Retentions for the year to 31 December 20X2	249
10% loan repayable 20X8	720
	3,206

You have identified the following information:

- Expansion plans

  The company plans to spend sh.1.2 million on new modern production equipment. This will allow current capacity to be increased and there will be a consequent increase in the number of customers serviced.

  The business is therefore expected to grow at 20% for each of the next three years.
  This applies to revenue and cost of sales. Operating costs will be tightly controlled in this period and will only rise at 10% p.a.

- Working Capital control

  The Company prides itself on maintaining its control over its sales and purchases ledger. Consequently, even though there is a high growth anticipated, the company does not expect the average credit period given or taken to alter, i.e sales to receivables ratio and payables to cost of sales ratio will be maintained.

  The inventory levels are not expected to change, as a result of the modern production techniques that will be employed.

- Depreciation

  The new capital expenditure will be depreciated on a straight line basis over ten years.

- Taxation

  The company pays tax at 28% Capital allowances on the new equipment are available at 20% p.a. on a reducing balance basis. All of the existing capital has been written down to zero for tax purposes. Tax is paid in the same year in which it is charged.

- Returns to investors

  Dividends will grow each year in line with revenue i.e 20% p.a

Required:

(a) Using the information in the scenario:

(i) Prepare forecast income statements for the years 20X3, 20X4 and 20X5. (11 marks)

(ii) Prepare cash flow forecasts for the years 20X3, 20X4 and 20X5, and estimate the amount of funds which will need to be raised by the company to finance its expansion. (14 marks)

(b) Plan a report to the directors of Langa Langa Ltd which:

(i) Discusses the key aspects and implications of the financial information you have obtained in your answer to part (a) of the question. (2½ marks)

(ii) Recommends additional methods of financial forecasting which could be used with advantage by the company's management.
You should assume that only forecasts prepared by the company at present are similar to those you have prepared for your answer to part (a) of this question. (2½ marks)

(Total = 30 marks)

QUESTION 2

A company is building a model in order to forecast total costs based on the level of output. The following data is available for last year:

	Output '000 units	**Costs Sh'000**
January	16	170
February	20	240
March	23	260
April	25	300
May	25	280
June	19	230
July	16	200
August	12	160
September	19	240
October	25	290
November	28	350
December	12	200

Required:

(a) Calculate the correlation coefficient between output and costs, giving your answer to three decimal places. (10 marks)

(b) Determine the regression model (equation) which links output and costs. (10 marks)

(Total = 20 marks)

QUESTION 3

Mango Ltd has recently developed a new product, and is planning a marketing strategy for it. A choice must be made between selling the product at a price of either sh.1,500 or sh.1,700.

Estimated Sales Volumes are as follows:

At price of sh.1,500 per unit		**At price of sh.1,700 per unit**	
Sales Volume (Units)	**Probability**	**Sales Volume (Units)**	**Probability**
20,000	0.1	8,000	0.1
30,000	0.6	16,000	0.3
40,000	0.3	20,000	0.3
		24,000	0.3

Additional information:

(a) Sales promotion costs would be sh.500,000 at a price of sh.1,500 and sh.1,200,000 at a price of sh.1,700.

(b) Material costs are sh.800 per unit.

(c) Labour and variable production overhead costs will be sh.500 per unit up to 30,000 units and sh.550 per unit for additional units.

(d) Fixed production costs will be shs.3,800,000.

The management of Manga Ltd wish to allow for the risk of each pricing decision before choosing sh.1,500 or sh.1,700 as the selling price.

Required:
Determine which sales price would be preferred if the management selected the alternative which:

(a) Minimized the worst possible outcome of profit. (10 marks)

(b) Maximized the best possible outcome of profit. (10 marks)

QUESTION 4

The sales (in sh'000) of swimwear by a large departmental store for each period of three months are as follows:

Quarter	**20X4 Sh'000**	**20X5 Sh'000**	**20X6 Sh'000**	**20X7 Sh'000**
First		8	20	40
Second		30	50	62
Third		60	80	92
Fourth	24	20	40	

Required:
(a) Using an additive model, find the centred moving average trend. (7 marks)

(b) Find the average seasonal variation for each quarter. (6 marks)

(c) Predict sales for the last quarter of 20X7 and the first quarter of 20X8, stating any assumptions. (7 marks)

(Total = 20 marks)

QUESTION 5

Spreadsheet packages can be used to build business models to assist the forecasting and planning process. They are particularly useful for "what if" analysis.

Required:
Discuss the above the statement and highlight the advantages and disadvantages of spreadsheets.
(20 marks)