The Co-operative University of Kenya

END OF SEMESTER EXAMINATION DECEMBER-2016

EXAMINATION FOR THE DEGREE OF BACHELOR OF COMMERCE (BCOM IV SEM I)

UNIT CODE: HBF 2403/ HCOB 2411

UNIT TITLE: FINANCIAL MODELLING AND FORECASTING

DATE: 16TH DECEMBER, 2016 **TIME: 2:00 PM – 4:00 PM**

INSTRUCTIONS:

- Answer question **ONE (compulsory)** and any other **TWO** questions

QUESTION ONE

(a) Differentiate between the qualitative and quantitative as used in forecasting. (4 Marks)

(b) Outline the steps in forecasting using decomposition of time series. (4 Marks)

(c) You are provided with the following data.

Month	**Jan**	**Feb**	**March**	**April**	**May**	**June**	**July**	**Aug**	**September**
Sales '000'	450	440	460	410	380	400	370	360	410

Required;

i) Conduct a three month weighted moving average. (4 Marks)

ii) Forecast the sales for the month of October. (2 Marks)

iii) Discuss the limitations of moving averages as a method of financial forecasting. (3 Marks)

(d) Outline three objectives of financial forecasting. (3 Marks)

(e) Highlight the assumptions of Markov analysis. (3 Marks)

(f) Twelve administrative trainees in a company took an aptitude test in two parts, one designed to test ability to do appropriate calculations and the other designed to test skill in interpreting results. Their scores were as follows:

Trainee	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**L**	**M**
Calculation Score	23	56	74	29	82	45	36	51	60	55	52	88
Interpretation Score	16	38	65	39	32	51	11	19	47	54	43	50

Required:

i) Obtain the interpretation on calculation regression line, using the method of least squares. (6 Marks)

ii) Trainee N obtained 72 in the calculation but was absent for interpretation test. Use the regression line to estimate trainee N's interpretation score. (4 Marks)

QUESTION TWO

(a) The monthly electricity bill at the Fidelity Ltd over the past 12 months has been as follows:

Month	**Amount (sh.)**
December	30,660
January	27,190
February	30,570
March	30,640
April	29,730

May	31,530
June	29,720
July	33,070
August	30,010
September	27,550
October	30,130
November	27,940

Mr. Paul the accountant, is considering using exponential index Smoothing with = 0.5 to forecast future electricity sales.

Required:

Determine next December's Forecast. (10 Marks)

(b) State and explain any FIVE applications and uses of Financial modeling. (10 Marks)

QUESTION THREE

The management of Kiboko Ltd. Want to establish the amount of Financial needs for the next two years. The balance sheet of the firm as at 31 December 2001 is as follows:

	Sh. '000'
Net fixed assets	124,800
Stock	38,400
Debtors	28,800
Cash	7,200
Total assets	**199,200**
Financed by:	
Ordinary share capital	84,000
Retained earnings	35,200
12% long-term debt	20,000
Trade creditors	36,000
Accrued expenses	24,000
	199,200

Additional Information;

1. For the year ended 31 December 2001, sales amounted to sh. 240,000,000. The firm projects that the sales will increase by 15% in year 2002 and 20% in year 2003.
2. The after tax profit on sales has been 11% but the management is pessimistic about future operating costs and intends to use an after-tax profit on sales rate of 8% per annum.
3. The firm intends to maintain its dividend payout ratio of 8%. Assets are expected to vary directly with sales while trade creditors and accrued expenses form the spontaneous sources of financing.
4. Any external financing will be effected through the use of commercial paper.

Required

(a) Determine the amount of external financial requirements for the next two years. (10 Marks)

(b)

i. A proforma balance sheet as at 31 December 2003. (7 Marks)

ii. State the fundamental assumption made in your computations in (a) and b (i) above. (3 Marks)

QUESTION FOUR

(a) The following data relates to Maendeleo Company limited in relations to sales and cost of advertisement for the year ended 30th June 2010.

Sales (y) sh '000'	Cost (x) sh. '000'
170	20
240	40
260	50
300	60
220	30
250	40

Required:

i) Compute the relationship between sales and cost of advertisement. (4 Marks)

ii) Forecast for sales if sh. 50,000 is spent on advertisement. (2 Marks)

iii) What would be the forecast sales if advertisement cost is sh. 100,000 (2 Marks)

(b) Maxwell traders Ltd is a trading company. The following amounts were extracted from the books of account on 31st December 2014.

TRIAL BALANCE AS AT 31.12.2014

Shs 100 ordinary share capital			500,000
Land & Buildings		400,000	
Motor vehicles		125,000	
Equipment		85,000	
Furniture & fittings		75,000	
Stock		19,500	
Purchases and Sales		570,000	670,000
Debtors & Creditors		120,000	148,000
Long term loan			50,000
Bank			4,400
Returns		6,000	7,600
Carriage		650	1,200
Depreciation	Land & Buildings		70,000
	Motor vehicle		30,000
	Equipment		10,000
Provision for bad & doubtful debts			3,000
Wages and salaries		34,750	
Rates		19,000	
Insurance		6,500	
Telephone & Postage		4,600	
Discount			2,500
Loan interest		4,500	
Motor vehicles expenses		23,300	
		1,495,500	**1,495,500**

Additional Information:

1. Stock at 31.12.2014 was physically established at sh 28,500
2. Wages and salaries of sh. 2,900 were outstanding at 31.12.2014
3. Rates were paid for 19 months running through to 30.09.2015
4. Provision for doubtful debts is to be provided for at 3% of the year end debtors
5. The bank balance attracts banking service charges at sh 850 per month. This charge is yet to be taken into account.
6. The amount for sales includes sh. 10,000 received from a customer whose delivery will be made in February 2015.
7. The Company rents a section of the premises and expects to receive rent at year end amounting to sh 12,000.

8. Corporation tax is paid at 10% of profits while the company's shares are currently trading at sh 15 each.
9. Ordinary share dividend of 10% of ordinary stock is proposed.
10. Depreciation is to be charged on yearend balance at:
    - Motor vehicle 20% reducing balance method
    - Land and buildings 5% straight line method
    - Equipment 10% straight line method.

Required:
Advice the company on the chances of corporate failure for the coming one year based on the Atman's Z-score Model. (12 Marks)

QUESTION FIVE

(a) Outline any FIVE Quantitative Methods used in financial Models. (5 Marks)

(b) Sam and Obama have set up a business named Sama Enterprises as partners. The firm will venture in the purchase and sale of toy cars with effect from 1 July 2010 with opening cash balance of sh. 2,000,000

The projected sales for the first months and thereafter are as follows:

Month	Projected sales (Units)
July	2,400
August	3,600
September	4,800
October and monthly thereafter	9,600

Additional information:

1. The selling price per toy car would be sh. 800
2. All sales would be on credit terms, requiring settlement two months after the date of sale. However, if settlement was made by customers within one month of sale, a 2.5% cash discount would be given.
3. Of the total sales, 60% are expected to be settled two months after the date of sale and 40% (before any discount is deducted) are expected to be settled one month after the date of sale.
4. The purchase cost of each toy car is sh. 490. The firm intends to make purchases at the end of each month in order to maintain sufficient inventory for sale in the following month.
5. Payment for purchases would be made one month in arrers.
6. Non-current assets are expected to cost sh. 1,750,000 payable on 1 July 2010.
7. Annual rent is expected to be sh. 1,680,000 and be payable quarterly in advance commencing 1 July 2010.
8. Monthly wages are expected to be sh. 280,000 payablein the month they would be incurred.
9. Other monthly overheads are expected to be sh. 420,000 half of which will be payable in the month they are incurred and the balance one month later.

Required:
A monthly cash budget for Sama Enterprises for the months of July, August, September, October and November 2010. Your cash budget should indicate the expected net cash flow for the month and the cumulative budgeted cash surplus or deficit at the end of each month. (15 Marks)