TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF BUSINESS
Department of Accounting & Finance

UNIVERSITY EXAMINATION FOR:

BACHELOR OF COMMERCE
BACHELOR OF BUSINESS ADMINISTRATION

(FOURTH YEAR)

BAC 4407: ISSUES IN MANAGEMENT ACCOUNTING

END OF SEMESTER EXAMINATION

SERIES: sept. 2017

TIME: 2 HOURS

DATE: 2017

Instructions to Candidates
You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of FIVE questions. Question One is Compulsory. Answer any other two questions.
Do not write on the question paper.

Question ONE (Compulsory)

a) Summary financial statements are given below for one division of a large divisionalized company.

Summary Divisional Financial Statements for the year ended 31st December.
Balance Sheet

	Sh.000
Non-current assets	1,500,000
Current assets	600,000
Total assets	**2,100,000**
Divisional equity	1,000,000
Long-term borrowings	700,000
Current liabilities	400,000
Total equity and liabilities	**2,100,000**

Income statement

	Sh.000
Revenue	4,000,000
Operating costs	3,600,000
Operating profit	400,000
Interest Paid	70,000
Profit before tax	**330,000**

The cost of capital for the division is estimated at 12% each year.
Annual rate of interest on the long-term loans is 10%.
All decisions concerning the divisions' capital structure are taken by central management.

Required:

i) Calculate the divisional Return on Investment (ROI) for the year ended 31st December. (5 marks)

ii) Calculate the divisional Residual Income (RI) for the year ended 31st December. (5 marks)

b) The following data relate to a manufacturing company. At the beginning of August, there was no inventory. During August 2,000 units of product X were produced, but only 1,750 units were sold. The financial data for product X for August were as follows:

	Sh.000
Materials	40,000
Labour	12,600
Variable Production Overheads	9,400
Fixed Production Overheads	22,500
Variable Selling Costs	6,000
Fixed Selling Costs	19,300
Total Cost for X	**109,800**

Required:

i) Determine the value of inventory of X at 31st August using a marginal costing approach. (5 marks)

ii) Determine the value of inventory of X at 31st August using a throughput accounting approach. (5 marks)

c) Explain the "total quality management" philosophy and its relevance to the practice of management accounting as applied in the modern economic environment. (10 marks)

(Total = 30 marks)

Question TWO

Y and Z are two divisions of a large company that operate in similar markets. The divisions are treated as investment centers and every month they each prepare an operating statement to be submitted to the parent company. Operating statement for these two divisions for October, 2014 are shown below:

Operating Statements for October, 2014

	Y	Z
	Sh.000	**Sh.000**
Sales Revenue	90,000	55,500
Less Variable costs	34,500	31,200
Contribution	55,500	24,300
Less Controllable Fixed costs (Includes depreciation on divisional assets)	9,500	4,200
Controllable income	46,000	20,100
Less apportioned central costs	33,800	18,000
Net income before tax	**12,200**	**2,100**
Total divisional net assets	**Sh.976 million**	**Sh.126 million**

The company currently has a target return on capital of 12% per annum. However, the company believes it cost of capital is likely to rise and is considering the target to rise and return on capital. At present the performance of each division and the divisional management are assessed primarily on the Return on Investment (ROI).

Required:

a) Calculate the annualized Return on Investment (ROI) for divisions Y and Z, and discuss the relative performance of the two divisions using the ROI data and other information given above. (9 marks)

b) Calculate the annualized Residual Income (RI) of divisions Y and Z, and explain the implications of this information for the evaluation of the divisions' performance. (6 marks)

c) Briefly discuss the strengths and weaknesses of ROI and RI as methods of assessing the performance of divisions. Explain two further methods of assessment of divisional performance that could be used in addition to ROI or RI. (5 marks)

(Total = 20 marks)

Question THREE

Dexter Company Ltd produces and sells a single product, Leather bags, selected cost and operating data relating to the product for two years are given below:

	Sh.
Selling Price per unit	5,000
Manufacturing Costs:	
Variable costs per unit produced:	
Direct materials	1,100
Direct labour	600
Variable overhead	300
Fixed cost per year	12,000,000
Selling and administrative costs:	
Variable cost per unit sold	500
Fixed selling and administrative cost per year	7,000,000

	Year 1	Year 2
Units in beginning inventory	-0-	2,000
Units produced during the year	10,000	6,000
Units sold during the year	8,000	8,000
Units in ending inventory	2,000	-0-

Required:

a) Assume that the company uses absorption costing:
   i) Compute the unit product cost in each year.
   ii) Prepare an income statement for each year. (8 marks)

b) Assume that the company uses variable costing:
   i) Compute the unit product cost in each year.
   ii) Prepare an Income Statement for each year. (8 marks)

c) Reconcile the variable costing and absorption costing net income figures. (4 marks)

(Total = 20 marks)

Question FOUR

MN Ltd manufactures automated industrial trolleys, known as TRLS. Each TRL sells for Sh.200,000 and the material cost per unit is Sh.60,000. Labour and variable overhead are Sh.550,000 and Sh.800,000 per week respectively. Fixed production costs are Sh.45 million per annum and marketing and administrative costs are Sh.26.5 million per annum.

The trolleys are made on three different machines. Machine X makes the four frame panels required for each TRL. Its maximum output is 180 frame panels per week. Machine X is old and unreliable and it breaks down from time to time – it is estimated that, on average, between 15 and 20 hrs of production are lost per month. Machine Y can manufacture parts for 52 TRLS per week and Machine Z, which is old but reasonably reliable, can process and assemble 30 TRLS per week.

The company has recently introduced a just-in-time (JIT) system and it is company policy to hold little work in-progress and no finished goods stock from week to week. The company operates a 40-hour week, 48 weeks a year (12 months X 4 weeks) but cannot meet demand. The demand for the next year is predicted to be as follows – this is expected to be typical of the demand for the next 4 years.

	Units per week		**Units per week**
January	30	**July**	48
February	30	**August**	45
March	33	**September**	42
April	36	**October**	40
May	39	**November**	33
June	44	**December**	30

The production manager has suggested that the company replaces machine Z with either Machine F or Machine G. Machine F can process 36 TRLS per week and costs Sh.33 million. It is expected that labour costs would increase by Sh.250,000 per week if Machine F were installed. Machine G can process 45 TRLS per week and costs Sh.55 million. It is estimated that the variable overhead cost per week will increase by Sh.450,000 if TRLS are made on Machine G. The maintenance manager is keen to spend Sh.10,000,000 on a major overhaul of Machine X – he says this will make it 100% reliable.

The management of MN Ltd is wondering whether it should now install a full standard costing and variance analysis system. At present, standard costs are calculated only as part of the annual budgeting process. Management is concerned about implementing so many changes in a short space of time, but feels the system could be very useful.

The company's cost of capital is 10% per annum. It evaluates projects over 4 years and depreciates its assets over 5 years.

Required:
Using the case of MN Ltd in the scenario:

a) Explain the concept of throughput accounting. (4 marks)

b) Calculate the throughput accounting ratio (defined below) for the key resource for an average hour next year. (6 marks)

$$\text{Throughput accounting ratio} = \frac{\text{Return per factory hour}}{\text{Cost per factory hour}}$$

where

$$\text{Return per factory hour} = \frac{\text{Sales price - materials cost}}{\text{Time on key resource}}$$

c) To what uses do advocates of throughout accounting suggest the ratio to put? (4 marks)

d) Explain how the concept of contribution in throughput accounting differs from that in marginal costing. (6 marks)

(Total = 20 marks)

Question FIVE

Temeke Ltd makes three main products, using broadly the same production methods and equipment for each. A conventional product costing system is used to present, although an activity-based-costing (ABC) system is being considered. Details of the three products for a typical period are:

	Hours per Unit		**Material**	
	Labour Hours	**Machine Hours**	**Per Unit Sh.**	**Volume Units**
Product X	0.5	1.5	2000	750
Product Y	1.5	1.0	1200	1250
Product Z	1.0	3.0	2500	7000

Direct labour costs Sh.600 per hour and production overheads are absorbed on a machine hour basis. The rate for the period is Sh.2,800 per machine hour.

Required:

a) Calculate the cost per unit for each product using conventional methods. (3 marks)

Further analysis shows that the total of production overheads can be dividend as follows:

	%
Cost relating to set-ups	35
Cost relating to machinery	20
Cost relating to materials handling	15
Costing relating to inspection	30
Total Production overhead	**100**

The following total activity volumes are associated with the product line for the period as a whole:

	Number of Set-ups	Movement of Materials	Number of inspections
Product X	75	12	150
Product Y	115	21	180
Product Z	480	87	670
	670	**120**	**1,000**

b) Calculate the cost per unit for each product using ABC principles. (15 marks)

c) Comment on the reasons for any differences in the costs in your answers to a) and b). (2 marks)

(Total = 20 marks)