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**MANAGERIAL ACCOUNTING**

November 2018

Time: 3 hours



**THE KENYA NATIONAL EXAMINATIONS COUNCIL**

**BUSINESS EDUCATION SINGLE AND GROUP CERTIFICATE  
EXAMINATIONS  
STAGE III**

**DIPLOMA IN SUPPLY CHAIN MANAGEMENT  
DIPLOMA IN BUSINESS MANAGEMENT  
DIPLOMA IN CO-OPERATIVE MANAGEMENT  
DIPLOMA IN HUMAN RESOURCE MANAGEMENT**

**MODULE III**

**MANAGERIAL ACCOUNTING**

**3 hours**

**INSTRUCTIONS TO CANDIDATES**

*This paper consists of SEVEN questions.*

*Answer any FIVE questions in the answer booklet provided.*

*All questions carry equal marks.*

*Candidates should answer the questions in English.*

**This paper consists of 9 printed pages.**

**Candidates should check the question paper to ascertain that  
all the pages are printed as indicated and that no questions are missing.**

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**Turn over**

1. (a) The following information relates to Piller Manufacturers for the first six months of the year ended 30 June 2018:

2018	Machine hours	Machine maintenance costs (Ksh)
January	6,800	376,200
February	6,000	374,000
March	7,200	377,900
April	7,800	380,100
May	8,200	382,800
June	6,200	375,900

- (i) Using the high-low method, estimate the fixed element and variable element of the machine maintenance costs.
- (ii) Formulate the machine maintenance cost equation in the form:  $y = a + bx$ .
- (iii) Using the equation in (ii) above, estimate the machine maintenance costs for July 2018, if the estimated machine hours are 9,000. (9 marks)
- (b) Tonik Manufacturers Limited has the following estimates available for the preparation of the budgets for the last quarter of 2018.

2018	Sales (units)	Purchases of raw materials (kg)	Direct labour (Ksh)	Overheads (Ksh)
August	360	490	70,000	47,000
September	420	210	92,500	68,000
October	480	350	130,000	97,000
November	510	390	175,000	86,000
December	550	450	115,000	74,000

Additional information:

- All purchases and sales are on credit.
- The selling price per unit is Ksh 1,000 and the cost of raw materials is Ksh 100 per kg.
- Debtors are allowed one month's credit.
- Suppliers are paid after two months.
- Direct labour is paid on a monthly basis.
- Overheads are paid one month in arrears.

- The company will pay dividends amounting to Ksh 630,000 in the month of December 2018.
- The company will purchase and install CCTV equipment in October 2018 for Ksh 170,000. A deposit of Ksh 120,000 will be paid immediately and the balance of Ksh 50,000 will be paid in the following month.
- Idle premises will be leased out at Ksh 240,000 in the month of December and cash will be received immediately.
- The expected cash balance as at 1 October 2018 is Ksh 76,000.

Prepare cash budget for the months of October, November and December 2018.

(11 marks)

2. (a) Explain **four** assumptions of cost-volume-profit analysis. (8 marks)
- (b) Genery Limited intends to invest Ksh 1,100,000 in a project.

The following information relates to the project:

Year	Net cash inflows (Ksh)
1	300,000
2	900,000
3	400,000
4	100,000

- (i) Determine the Net Present Value of the project at each of the following discount factors:
- (I) 15%
- (II) 24%
- (ii) Using the results obtained in (i) above, compute the Internal Rate of Return (IRR) of the project.

(12 marks)

3. (a) Texus Limited intends to either manufacturer a product or purchase the product from the market. The probability of the manufacture being successful is 0.7. If the manufacture is unsuccessful the estimated loss will be Ksh 2,000,000. If the manufacture is successful the outcomes and their corresponding probabilities will be as follows:

Outcome	Probability	Profit (Ksh)
Good	0.3	8,000,000
Moderate	0.5	4,000,000
Poor	0.2	250,000

If the product is purchased, the expected profit will be Ksh 1,500,000.

- (i) Draw a decision tree to represent the information above.
- (ii) Advise the management on whether to manufacture or purchase the product. (8 marks)
- (b) The table below shows the time, in minutes, taken by three employees; Peter, Queen and Robert to complete three tasks A, B and C.

Employee	Tasks		
	A	B	C
Peter	24	15	7
Queen	17	19	15
Robert	8	9	25

Determine the optimal allocation of tasks to the employees in order to minimize the time taken. (12 marks)

4. (a) Explain **four** Managerial Accounting decisions that may be made by a firm in relation to the marketing of a product. (8 marks)
- (b) Halisi Limited manufactures two products, X and Y at different factory sites.

The following information relates to the products for the year ended 31 December 2017:

	Product X	Product Y
Sales (units)	10,000	18,000
Selling price per unit (Ksh)	60	50
Variable cost per unit (Ksh)		
Direct materials	12	15
Direct labour	8	6
Variable overheads	4	3
Annual fixed overheads (Ksh)	450,000	390,000

- (i) For each product, determine:
- (I) break-even point in units;
  - (II) break-even point in shillings;
  - (III) the current profit for the year.
- (ii) Comment on the performance of the products.



- (iii) The firm intends to rebrand product X. This will increase the direct material cost to Ksh 16 per unit. As a result, the sales volume will increase to 15,000 units.
- (I) Calculate the expected profit.  
 (II) Advise the management on whether to rebrand the product or not.  
 (12 marks)

- (a) Explain **four** functions of budgeting in an organization. (8 marks)
- (b) State Enterprises intends to invest in either product P or product Q. The projects have a useful life of 4 years. The initial cash outlay for each project is Ksh 1,000,000.

The following information relates to the projects:

• Profits

Year	Project P Ksh	Project Q Ksh
1	550,000	300,000
2	480,000	700,000
3	170,000	200,000
4	150,000	50,000
Estimated scrap value at the end of year 4	200,000	300,000

The annual depreciation is Ksh 250,000.

- (i) For each project calculate the:
- (I) Accounting Rate of Return (ARR);  
 (II) Pay Back Period (PBP).
- (ii) Advise the management on the project to invest in. (12 marks)

6. (a) Explain each of the following queueing systems:
- (i) Single channel single service point;  
 (ii) Multiple channel single service point;  
 (iii) Single channel multiple service points;  
 (iv) Multiple channel multiple service points.  
 (8 marks)

- (b) Maoni Limited has three manufacturing points; MI, MII and MIII and three warehouses; WI and WII and WIII. The following are the per unit costs, in Kenya shillings, of transporting the product from the plants to the warehouses:

Manufacturing plant	Warehouses		
	WI	WII	WIII
MI	6	10	2
II	9	4	5
III	12	8	3

The demand for the product in the warehouse is as follows:

	Units
WI	1,600
WII	2,900
WIII	3,400

The production capacity for the plants are as follows:

	Units
MI	4,000
II	2,200
III	1,700

Using the Vogel's Approximation Method (VAM):

- prepare the transportation schedule that will minimize the costs.
- determine the total minimum cost of transportation.

(12 marks)

7. (a) Crata Limited has two divisions; L and M. Division L manufactures components which are supplied to Division M at a transfer price of Ksh 80 per unit. Division M incurs variable costs of Ksh 30 per component and then sells the component. The following are the selling prices and their respective estimated demand levels for division M:

Selling price per unit	Demand
Ksh	Units
250	20,000
230	35,000
200	39,000
195	42,000

- (i) For each of the demand levels, prepare a schedule showing:
- sales;
  - variable costs;
  - transfer cost;
  - contribution.
- (ii) Determine the demand level that will maximize contribution for Division M. (9 marks)
- (b) Jupita Limited manufactures a single product which is sold at Ksh 250 per unit. During the year ended 30 June 2018, 180,000 units were produced and sold.

The following information relates to the costs for the year:

	Ksh
(I) <b>Production cost per unit:</b>	
Direct materials	35
Direct labour	20
Direct expenses	1
Variable overheads	6
(II) Sales commission is 5% of sales.	
(III) <b>Annual fixed costs:</b>	<b>Ksh</b>
Production	5,350,000
Administration	10,540,000
Marketing	3,200,000

- (i) Prepare income statement for the year ended 30 June 2018, under marginal costing method.
- (ii) In order to increase the sales volume, the management has proposed the following changes for the coming year:
- Reduce the selling price by Ksh 30 per unit.
  - Carry out a marketing campaign at a cost of Ksh 1,462,000.
- (I) Prepare income statement based on the management's proposal.
- (II) Advise the management on whether to implement the proposal or not.  
(11 marks)



**Table A** Present Value of Sh 1 Received at the End of n Periods:  
 $PVIF_{r,n} = 1/(1+r)^n = (1+r)^{-n}$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091	.8929	.8772	.8696	.8621	.8475	.8333	.8055	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264	.7972	.7685	.7561	.7432	.7182	.6944	.6504	.6104	.5739	.5407
3	.9706	.9433	.9151	.8890	.8638	.8396	.8163	.7938	.7722	.7513	.7118	.6750	.6575	.6407	.6086	.5787	.5245	.4788	.4348	.3975
4	.9610	.9238	.8865	.8546	.8227	.7921	.7629	.7350	.7084	.6830	.6355	.5921	.5718	.5523	.5198	.4823	.4230	.3725	.3294	.2923
5	.9515	.9057	.8626	.8219	.7835	.7473	.7130	.6806	.6499	.6209	.5674	.5194	.4972	.4781	.4371	.4019	.3411	.2910	.2495	.2149
6	.9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963	.5645	.5068	.4558	.4323	.4104	.3704	.3349	.2751	.2274	.1890	.1580
7	.9327	.8706	.8131	.7599	.7107	.6651	.6227	.5835	.5470	.5132	.4523	.3996	.3759	.3538	.3139	.2791	.2218	.1776	.1432	.1162
8	.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019	.4665	.4039	.3506	.3269	.3050	.2660	.2326	.1789	.1388	.1085	.0854
9	.9143	.8368	.7664	.7026	.6446	.5919	.5439	.5002	.4604	.4241	.3606	.3075	.2843	.2630	.2255	.1938	.1443	.1084	.0822	.0628
10	.9053	.8203	.7441	.6756	.6139	.5584	.5083	.4632	.4224	.3855	.3220	.2697	.2472	.2267	.1911	.1615	.1154	.0847	.0623	.0462
11	.8963	.8043	.7224	.6496	.5847	.5268	.4751	.4289	.3875	.3505	.2875	.2366	.2149	.1954	.1619	.1346	.0938	.0662	.0472	.0340
12	.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555	.3186	.2567	.2076	.1869	.1685	.1372	.1122	.0757	.0517	.0357	.0250
13	.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3262	.2897	.2292	.1821	.1625	.1452	.1163	.0935	.0610	.0404	.0271	.0184
14	.8700	.7579	.6611	.5775	.5051	.4423	.3878	.3405	.2992	.2633	.2046	.1597	.1413	.1252	.0985	.0779	.0492	.0316	.0205	.0135
15	.8613	.7430	.6419	.5553	.4810	.4173	.3624	.3152	.2745	.2394	.1827	.1401	.1229	.1079	.0835	.0649	.0397	.0247	.0155	.0099
16	.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519	.2176	.1631	.1229	.1069	.0930	.0708	.0541	.0320	.0193	.0118	.0073
17	.8444	.7142	.6050	.5134	.4363	.3714	.3166	.2703	.2311	.1978	.1456	.1078	.0929	.0802	.0600	.0451	.0258	.0150	.0089	.0054
18	.8360	.7002	.5874	.4936	.4155	.3503	.2959	.2502	.2120	.1799	.1300	.0946	.0808	.0691	.0509	.0376	.0208	.0118	.0068	.0039
19	.8277	.6864	.5703	.4746	.3957	.3305	.2765	.2317	.1945	.1635	.1161	.0829	.0703	.0596	.0431	.0313	.0168	.0092	.0051	.0029
20	.8195	.6730	.5537	.4564	.3769	.3118	.2584	.2145	.1784	.1486	.1037	.0728	.0611	.0514	.0365	.0261	.0135	.0072	.0039	.0021
25	.7798	.6095	.4776	.3751	.2953	.2330	.1842	.1480	.1180	.0923	.0588	.0378	.0304	.0245	.0160	.0105	.0045	.0021	.0010	.0005
30	.7419	.5521	.4120	.3083	.2314	.1741	.1314	.0994	.0754	.0573	.0334	.0196	.0151	.0116	.0070	.0042	.0016	.0006	.0002	.0001
40	.6717	.4529	.3066	.2083	.1420	.0972	.0688	.0460	.0318	.0221	.0107	.0053	.0037	.0026	.0013	.0007	.0002	.0001	.	.
50	.6080	.3715	.2281	.1407	.0872	.0543	.0339	.0213	.0134	.0085	.0035	.0014	.0009	.0006	.0003	.0001	.	.	.	.
60	.5504	.3048	.1897	.0951	.0535	.0303	.0173	.0099	.0057	.0033	.0011	.0004	.0002	.0001	.	.	.	.	.	.

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