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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) Jamma Limited manufactures a single product. The following is a summarised income statement for the year ended 31 December 2016:

	Ksh	Ksh
Sales		4,000,000
Less:		
Variable costs	1,600,000	
Fixed costs	<u>3,600,000</u>	
		<u>(5,200,000)</u>
Net Loss		<u>1,200,000</u>

Calculate the:

- (i) contribution sales ratio;
- (ii) break even point in shillings;
- (iii) sales value, if the firm targets a profit of Ksh 300,000 in the coming year;
- (iv) margin of safety in shillings, at the target profit sales level.

(8 marks)

- (b) Tenda Limited intends to invest in either project Q or project R. The following information relates to the projects:

		Project Q	Project R
		Ksh	Ksh
Cash Outlay		2,000,000	3,000,000
Cash inflows:			
Year	1	300,000	800,000
	2	500,000	1,900,000
	3	1,100,000	1,500,000
	4	700,000	600,000
	5	400,000	200,000

The company's cost of capital is 12%.

- (i) For each project, determine the:
  - I. present value;
  - II. discounted payback period;
  - III. profitability index.
- (ii) Advise the management on the project to invest in.

(12 marks)

- 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 manufacture 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



- (b) The data below relates to production output and total cost of a product manufactured by Weza Limited over a period of 6 years:

Year	Output (x) (Thousands of units)	Total cost (y) (Ksh '000)
1	4	70
2	6	90
3	9	110
4	12	130
5	15	150
6	18	170

- (i) Determine the regression equation:  $y = a + bx$ , using the least squares method.
- (ii) Estimate the total cost in year 7, if 20,000 units are produced.
- (12 marks)

4. (a) Spyce Limited has four jobs; I, II, III and IV, which are to be undertaken by four computer specialists; Abdi, Billy, Carol and Dennis. The following information relates to the time, in hours, that each specialist takes to perform each job.

Specialist	JOB			
	I	II	III	IV
Abdi	2	5	6	10
Billy	1	12	6	5
Carol	7	8	3	9
Dennis	13	5	8	7

Allocate the jobs to the specialists so as to optimise on time. (9 marks)

- (b) Pradox Equipment Limited intends to introduce a new washing machine in the market. Three models have been proposed:

Wash Only Wet (WOW)  
 Wash Rinse Wet (WRW)  
 Wash Rinse Dry (WRD)

The firm can only manufacture one model. The following information relates to the expected demand, probabilities and expected annual profits for the models.

Demand	Probability	Profits		
		WOW	WRW	WRD
		Ksh '000	Ksh '000	Ksh '000
High	0.35	15,000	34,000	22,000
Moderate	0.40	28,000	31,000	16,000
Low	0.25	(6,000)	(2,500)	8,000

- Draw a decision tree to represent the information above.
- Determine the expected values.
- Advise the management on the model to introduce in the market.

(11 marks)

5. (a) Explain **four** assumptions of a single server model in queueing. (8 marks)

- (b) Genero Limited manufactures three products, A, B and C. The following information relates to one unit of each product:

	Product A	Product B	Product C
	Ksh	Ksh	Ksh
Selling Price	47	56	60
Costs:			
Direct materials (at Ksh 4 per kg)	8	16	12
Direct labour	6	10	8
Variable production overheads	3	5	4

Additional information:

- The maximum annual demand for products A, B and C are 6,000, 4,000 and 9,000, respectively;
- The annual fixed overheads are Ksh 400,000;
- The direct material used in the manufacture of the products is limited to 45,000 kg in the coming year.

Determine the:

- contribution per unit for each product;
- order of priority of the products;
- optimal production mix;
- net profit at optimal production mix.

(12 marks)

6. (a) Explain **four** planning decisions that are made by a management accountant of a firm. (8 marks)
- (b) Banax Limited uses material MN 23 in the manufacture of its product. The material is purchased from Zepak Suppliers at Ksh 30 per unit.

The following data relates to the material:

Requirement per year	480,000 units
Cost per order	Ksh 11,250
Annual stockholding cost per unit	10% of the material price

- (i) Determine the:
- I. Economic Order Quantity (EOQ);
  - II. annual ordering cost;
  - III. annual holding cost;
  - IV. annual total cost.
- (ii) Zepak suppliers has offered a discount of 2% if the firm purchases in lots of 120,000 units.
- I. determine the total annual cost;
  - II. advise the management on whether to accept the discount offer or not.
- (12 marks)

7. (a) The following information relates to a project to be undertaken by Kaly Limited.

Activity	Preceding Activity	Duration (days)
A	-	4
B	A	7
C	A	10
D	C	8
E	D	6
F	B	3
G	B	5
H	F, G	2
I	E, H	12

- (i) Draw a network diagram for the project;
- (ii) Determine the:
- I. critical path;
  - II. project duration.

(10 marks)



- (b) The following is the budgeted income statement of Mambo Limited for the production and sale of 200,000 units of a product for the year ended 31 December 2016:

	Ksh	Ksh
Sales		12,000,000
Less cost of sales:		
Direct materials	1,000,000	
Direct labour	1,400,000	
Variable production overheads	400,000	
Fixed production overheads	<u>300,000</u>	
		<u>3,100,000</u>
Gross Profit		8,900,000
Less:		
Fixed administration expenses	3,720,000	
• Variable selling expenses (4% of sales)	<u>480,000</u>	
		<u>4,200,000</u>
Net Profit		<u>4,700,000</u>

During the year ended 31 December 2016, the firm produced and sold 180,000 units of the product at Ksh 65 per unit.

The following costs were incurred during the year:

	Ksh
Direct materials	1,620,000
Direct labour	2,700,000
Variable production overheads	360,000
Fixed production overheads	300,000
Fixed administration expenses	3,720,000
Variable selling expenses	468,000

In columnar form, prepare for the year 2016:

- I. budgeted income statement for an output of 180,000 unit.
- II. income statement for the actual production of 180,000 units.
- III. calculate the variances from the income statements prepared in (i) above.

(10 marks)



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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	.8066	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264	.7972	.7696	.7561	.7432	.7182	.6944	.6504	.6104	.5736	.5407
3	.9708	.9423	.9151	.8890	.8638	.8396	.8163	.7938	.7722	.7513	.7118	.6750	.6575	.6407	.6086	.5787	.5245	.4768	.4348	.3975
4	.9610	.9238	.8885	.8548	.8227	.7921	.7629	.7350	.7084	.6830	.6355	.5921	.5718	.5523	.5158	.4823	.4230	.3725	.3294	.2923
5	.9515	.9057	.8626	.8219	.7835	.7473	.7130	.6806	.6499	.6208	.5674	.5194	.4972	.4761	.4371	.4019	.3411	.2910	.2495	.2149
6	.9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963	.5645	.5066	.4566	.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	.5438	.5002	.4604	.4241	.3606	.3075	.2843	.2630	.2255	.1938	.1443	.1084	.0822	.0628
10	.9053	.8203	.7441	.6756	.6139	.5594	.5083	.4632	.4224	.3855	.3220	.2697	.2472	.2267	.1911	.1615	.1164	.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	.0194
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	.2178	.1631	.1229	.1069	.0930	.0706	.0541	.0320	.0193	.0118	.0073
17	.8444	.7142	.6050	.5134	.4363	.3714	.3165	.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	.0508	.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	.1460	.1160	.0923	.0588	.0378	.0304	.0245	.0160	.0105	.0046	.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	.0668	.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	.1697	.0951	.0535	.0303	.0173	.0099	.0057	.0033	.0011	.0004	.0002	.0001	.	.	.	.	.	.