2903/305 2926/305
2906/305 3103
2907/305
MANAGERIAL ACCOUNTING
November 2022
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN SUPPLY CHAIN MANAGEMENT
DIPLOMA IN BUSINESS MANAGEMENT
DIPLOMA IN CO-OPERATIVE MANAGEMENT
DIPLOMA IN HUMAN RESOURCE MANAGEMENT
MODULE III
BUSINESS EDUCATION SINGLE AND GROUP CERTIFICATE EXAMINATIONS
STAGE 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.
Show all your workings.
Candidates should answer the questions in English.

This paper consists of 8 printed pages.

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

1. (a) Explain **four** roles played by a management accountant in a business organization.

(8 marks)

(b) The management of Noli Limited intends to launch either product K or product M into the market. The following are the expected net profits or losses and associated probabilities under three market conditions.

Market Demand	Probability of occurence	Expected Net profit or loss	
		Product K Ksh.	Product M Ksh.
High	0.2	600,000	400,000
Medium	0.5	300,000	500,000
Low	0.3	(100,000)	50,000

(i) Draw a decision tree to present the information above.

(ii) Calculate the Expected Monetary Value (EMV) for each of the products, K and M.

(iii) Based on the results in (ii) above, advise the management on the product to launch.

(12 marks)

2. (a) The following information relates to units produced of a product and the cost of production incurred by Kolo Manufacturers during the first six months of the year 2021.

2021	Units produced	Cost of production Ksh.
January	500	20,000
February	300	18,000
March	700	28,000
April	350	19,000
May	200	15,000
June	600	25,000

(i) Using the high-low method, determine the:

(I) variable cost per unit;
(II) fixed cost for the period.

(ii) Formulate the linear cost function in the form of: $Y = a + bx$.

(iii) Estimate the production cost if 1,000 units are produced.

(8 marks)

(b) The following information relates to product JZ20 manufactured by Jako Limited:

	Ksh
Sales (400 units)	1,600,000
Less: Total costs	1,000,000
Profit	600,000

Fixed costs are 20% of the total costs:

(i) Determine the:

(I) break-even point in units;
(II) break-even point in shillings;
(III) margin of safety in units;
(IV) margin of safety in shillings;
(V) contribution-sales ratio.

(ii) Calculate the number of units to be manufactured and sold in order to obtain a target profit of Ksh.124,000.

(12 marks)

3. (a) Saleb Limited produces three products: X, Y and Z.
The following is the operating statement for the year ended 31 December 2021.

	Product X Ksh	Product Y Ksh	Product Z Ksh	Total Ksh
Sales	100,000	150,000	140,000	390,000
Total sales	120,000	90,000	99,000	309,000
Profit/loss	(20,000)	60,000	41,000	81,000

Additional information:

- Fixed cost are $\frac{1}{3}$ of the total costs.
- The management is considering dropping product X.

(i) For each of the products, prepare an operating statement using marginal costing technique.
(ii) Advise the management on whether to drop product X or not.

(10 marks)

5. (a) A teller at Kiti savings and credit society can serve an average of one customer in every 3 minutes. On average, a customer arrives after every 4 minutes.

Using the simple queuing model, determine the:

(i) average number of customers in the queue;
(ii) average number of customers in the queuing system;
(iii) average time a customer spends in the system.

(8 marks)

(b) Ziwa Dairy Limited has three milk processing plants; A, B and C. The company supplies milk to four different towns; W, X, Y and Z. The daily quantity of milk available from the plants is as follows.

Plant	Quantity Available (Litres)
A	5,000
B	8,000
C	7,000

The daily quantity of milk required in each of the towns is as shown below.

Town	Quantity Available (Litres)
W	4,000
X	6,000
Y	7,000
Z	5,000

The cost of transporting one litre of milk from each plant to each of the towns, in Kenya shillings, is as shown below.

Plants \ Town	W	X	Y	Z
A	2	5	4	3
B	4	1	5	4
C	3	2	2	3

Using the North-West corner rule, determine the:

(i) optimal transportation schedule that will minimize transportation cost.

(ii) minimum transportation cost.

(12 marks)

(b) Diam Limited intends to invest KSh.1,800,000 in either project A or project B. The following are the expected net cash inflows from the projects.

Year	Project A Ksh	PRoject B Ksh
1	(200,000)	400,000
2	600,000	500,000
3	1,000,000	1,000,000
4	800,000	600,000
5	1,200,000	1,000,000

The cost of capital is 14%.

(i) Calculate the Net Present Value (NPV) for each project.

(ii) Advise the management on the project to invest in.

(10 marks)

4. (a) Mobex Limited operates two divisions, P and Q.
Both divisions have proposed similar investment projects worth Ksh.20,000,000 each. Out of this investment, the controllable contribution is 14% of the proposed investment for division P, while division Q has estimated their controllable contribution to be 18%.

The capital charge is 16 % of the proposed investment for each division.

Using the residual income approach, advise the management on the division whose project should be undertaken.

(8 marks)

(b) Saba Limited has four salespersons: Abdi, Moses, Lilian and Mary. Each salesperson is to be assigned to a single town.

The following table shows the weekly sales in thousand of shillings, made by each salesperson in each of the towns.

Town \ Salesperson	Abdi	Moses	Lilian	Mary
A	20	16	13	18
B	10	14	16	13
C	14	6	10	18
D	16	12	8	15

Assign each salesperson to each town in order to maximize the total sales.

(12 marks)

6. (a) Explain each of the following terms as used in queuing.

(i) Queue discipline.
(ii) Queueing system;
(iii) Multi-channel service facility;
(iv) Waiting time.

(8 marks)

(b) Mangy Limited manufactures two products, Wye and Zed, using two types of materials: M1 and M2.
The following estimates relate to the month of January 2023.

- Expected sales of product Wye and Zed is 10,000 units and 8,400 units, respectively;
- The selling price per unit for Wye and Zed is Ksh.800 and Ksh.500, respectively.
- The standard material requirements per unit is as follows:

	Product	
	Wye	**Zed**
M1 (kg)	5	1
M2 (kg)	2	3

- The material cost per kilogram is Ksh.60 and Ksh.100 for material, M1 and M2, respectively.

- Finished goods inventory:

	Products	
	Wye	**Zed**
1 January 2023	280	360
31 January 2023	320	340

- Raw materials inventory:

	M1	**M2**
	Kg	**Kg**
1 January 2023	70	100
31 January 2023	360	300

Prepare :

(i) sales budget in shillings;
(ii) production budget in units;
(iii) material usage budget in units;
(iv) material purchases budget in shillings.

(12 marks)

7. (a) Explain **five** advantages of decentralization in the management of a business organisation. (10 marks)

(b) The following information relates to the cost of production incurred by Aleem Limited for the year 2021.

Units produced	Cost of production Ksh '000
10	8
12	10
14	10
15	14
16	15
20	18

(i) Formulate a linear regression equation in the form: $Y = a + bx$

(ii) Estimate the cost of producing 30 units of the product.

(10 marks)

able A Present Value of Sh 1 Received at the End of n Periods:

$PVIF_{r,n} = 1/(1 + r)^n = (1 + r)^{-n}$

riod	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	.8065	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264	.7972	.7695	.7561	.7432	.7182	.6944	.6504	.6104	.5739	.5407
3	.9706	.9423	.9161	.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	.6209	.5674	.5194	.4972	.4761	.4371	.4019	.3411	.2910	.2495	.2149
6	.9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963	.5645	.5066	.4556	.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	.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	.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	.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	*	*	*	*	*	*

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2903/305 2906/305
2907/305 2926/305
3103