

1. (a) Explain **four** methods of transfer pricing of products in organizations. (8 marks)
- (b) The following income statement has been extracted from the books of Randa Limited for the month of July 2016.

	Ksh	Ksh
Sales		5,800,000
Less: Costs:		
Direct materials	2,000,000	
Direct labour	3,000,000	
Overheads	<u>1,000,000</u>	<u>6,000,000</u>
Loss		<u>200,000</u>

90% of the overheads are variable.

In order to improve performance in the month of August 2016, the management accountant has proposed the following two options:

**Option A**

Improve the product by incurring additional variable costs of 8% of the current value. This will increase sales by 8%.

**Option B**

Incur promotional costs of Ksh 200,000. This will lead to an increase in the sales and variable costs by Ksh 1,000,000 and Ksh 500,000, respectively.

- (i) Using the marginal costing technique, determine the profit or loss under each option.
- (ii) Using the results in (i) above, advise the management on the option to adopt. (12 marks)

2. (a) Explain **four** differences between management accounting and financial accounting. (8 marks)

- (b) Monda Limited manufactures two products, MT<sub>1</sub> and MT<sub>2</sub>, using two types of raw materials R<sub>1</sub> and R<sub>2</sub>. The following are the estimates for the month of September 2017:

Sales	Units	Selling Price per Unit (Ksh)
MT <sub>1</sub>	4,000	900
MT <sub>2</sub>	3,500	1,000

*Practical  
Budgeted  
not  
less*

*Sales Budget*

*4010  
4.4*

$Q = \frac{E_1 + E_2 X}{D}$

Standard material requirements per unit

	MT <sub>1</sub>	MT <sub>2</sub>
R <sub>1</sub> (kg)	4	2
R <sub>2</sub> (kg)	1	3

Cost price per kg

	Ksh
R <sub>1</sub>	40
R <sub>2</sub>	60

Inventory

4000 - 4 kg - MT<sub>1</sub> - 4kg

	MT <sub>1</sub> (units)	MT <sub>2</sub> (units)	R <sub>1</sub> (kg)	R <sub>2</sub> (kg)
1 September 2017	160	170	160	120
30 September 2017	170	150	150	180

Prepare:

- (i) Sales budget ✓
- (ii) Production budget ✓
- (iii) Materials usage budget
- (iv) Materials purchase budget in kilograms and in Kenya shillings.

(12 marks)

3. (a) The data below relates to Petal Limited for a period of ten years.

Year	Number of units produced (X)	Total cost in Ksh '000 (Y)
2007	150	12
2008	120	10
2009	160	15
2010	200	18
2011	240	20
2012	260	24
2013	180	16
2014	250	22
2015	300	30
2016	200	20

$$\frac{\sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2}$$

- (i) Determine the regression equation of Y and X.
- (ii) Using the equation in (i) above, estimate the total costs for the year 2017 when the expected production is 230 units.
- (10 marks)

- (b) Explain **five** assumptions of a transportation problem. (10 marks)

4. (a) A firm has advertised for four jobs;  $J_1, J_2, J_3$  and  $J_4$ . Four contractors;  $C_1, C_2, C_3$  and  $C_4$  have submitted their tenders. The tender amounts, in thousand of Kenya shillings, are given as follows:

		<b>Jobs</b>			
		<b><math>J_1</math></b>	<b><math>J_2</math></b>	<b><math>J_3</math></b>	<b><math>J_4</math></b>
<b>Contractors</b>	<b><math>C_1</math></b>	30	58	70	40
	<b><math>C_2</math></b>	42	54	66	34
	<b><math>C_3</math></b>	34	50	74	30
	<b><math>C_4</math></b>	28	62	78	42

- (i) Determine the assignment that minimizes the total cost of the jobs.
- (ii) Determine the minimum total cost.
- (10 marks)

- (b) In a hospital, there is one doctor attending to patients in a single queue. The arrival of patients is random and follows a poisson distribution, at a rate of 0.20 patients per hour. The service at the hospital is exponentially distributed, at an average rate of 0.25 patients per hour.

Determine the:

- (i) average number of patients waiting in the queue.
- (ii) average number of patients in the queueing system.
- (iii) average time a patient spends in the queueing system.
- (iv) average time a patient spends in the queue.
- (v) probability that there will be 10 patients in the queueing system.
- (10 marks)

- ✓ 5. (a) Explain **five** limitations of the cost-volume profit (C-V-P) analysis, in decision making. (10 marks)
- (b) Leptra Limited is considering investing Ksh 2,000,000 in either Project A or Project B. The following are the expected cash inflows from each of the projects, for a period of five years.

Year	Project A (Ksh)	Project B (Ksh)
1	1,200,000	200,000
2	600,000	100,000
3	800,000	900,000
4	100,000	800,000
5	50,000	600,000

The cost of capital is 14%.

- (i) Determine the Profitability Index (PI) of each project.
- (ii) Using the results in (i) above, advise the management on the project to invest in. (10 marks)

6. (a) Treda Limited is to transport goods from three factories located in Nairobi, Mombasa and Kisumu, to three distribution centres in Machakos, Meru and Marsabit.

The following information concerns the supply at the sources and demand at the destinations.

Supply source	Number of units
Nairobi	20
Mombasa	30
Kisumu	80

Demand at destination	Number of units
Machakos	60
Meru	10
Marsabit	60

Transportation cost per unit (Ksh'000') is as per the table given below:

	Machakos	Meru	Marsabit
Nairobi	4	4	6
Mombasa	8	2	4
Kisumu	2	6	2

- (i) Using the least-cost method, determine the optimal transportation schedule for the firm.
- (ii) Ascertain the minimum cost of transportation, according to the schedule determined in (i) above.

(12 marks)

- (b) A firm sells a single product. The following table relates to the product for two different periods.

Period	Sales (ksh)	Variable cost (Ksh)	Profit (Ksh)
1	200,000	120,000	40,000
2	300,000	180,000	80,000

The price, unit variable cost and fixed cost are the same for the two periods.

Determine the:

- (i) fixed cost;
- (ii) breakeven sales revenue;
- (iii) profit when sales are Ksh 1,200,000;
- (iv) sales required to realise a profit of Ksh 220,000.

(8 marks)

7. (a) A company has a piece of land that it can either cultivate or lease out to a local farmer. The income from leasing would be Ksh 300,000 while the cost of cultivation would be Ksh 200,000.

There is a chance of getting a high, medium or low harvest upon cultivating the land. The following table shows the state of harvest, net income and associated probabilities.

State of harvest	Net income (Ksh)	Probability
High	1,000,000	0.6
Medium	600,000	0.3
Low	100,000	0.1

Using the information above,

- (i) construct a decision tree.
- (ii) determine the Expected Monetary Value (EMV).
- (iii) advise the management on the better option to take.

(12 marks)

- (b) Explain **four** advantages of Net Present Value (NPV) method in project appraisal.

(8 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	.8666	.8521	.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	.9151	.8890	.8638	.8396	.8153	.7938	.7722	.7513	.7118	.6756	.6575	.6407	.6086	.5787	.5245	.4768	.4348	.3975
4	.9610	.9238	.8885	.8548	.8227	.7921	.7629	.7350	.7084	.6830	.6385	.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	.6653	.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	.3989	.3759	.3538	.3139	.2791	.2218	.1776	.1432	.1162
8	.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019	.4665	.4039	.3506	.3259	.3050	.2660	.2326	.1789	.1388	.1085	.0854
9	.9143	.8368	.7664	.7026	.6446	.5919	.5439	.5002	.4604	.4241	.3606	.3075	.2842	.2630	.2255	.1939	.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	.2915	.2386	.2149	.1954	.1619	.1346	.0938	.0662	.0472	.0340
12	.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555	.3186	.2567	.2076	.1859	.1685	.1372	.1122	.0757	.0517	.0357	.0250
13	.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3252	.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	.7294	.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	.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	.0806	.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	.1450	.1150	.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	.5604	.3048	.1697	.0951	.0535	.0303	.0173	.0099	.0057	.0033	.0011	.0004	.0002	.0001	.	.	.	.	.	.

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