



MACHAKOS UNIVERSITY

University Examinations for 2017/2018 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF BANKING, ACCOUNTING & FINANCE

**FOURTH YEAR SECOND SEMESTER EXAMINATION FOR BACHELOR
COMMERCE (ACCOUNTING OPTION)**

BAC 403: MANAGEMENT ACCOUNTING II

DATE: 6/12/2017

TIME: 11:00 – 1:00 PM

INSTRUCTIONS:

Answer Question One and Any Other Two Questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- (a) Sawasawa Ltd is a fitness centre serving traders in the Central Business District (CBD). Currently, the centre has 4,000 members with each member paying a subscription fee of Sh.35,000 per annum.

The centre comprises of a gym, a swimming pool and a small exercise area.

A competitor plans to open a new fitness centre within the same locality. This is expected to cause a decrease in membership numbers for Sawasawa Ltd unless its facilities are upgraded.

Consequently, Sawasawa Ltd is considering the following options in a bid to improve the its membership numbers:

Option 1

No upgrade. In this case, membership numbers would be expected to fall to 3250 per annum for the next four years. Operational costs would remain unchanged at the current level of Sh. 4,500 per member per annum.

Option 2

Upgrade the exercise area. The capital cost of this upgrade would be Sh.18,000,000. The expected effect on membership numbers for the next four years is as follows:

Probability	Effect on membership numbers
0.3	Remain at their current level of 4,000 members per annum.
0.7	Increase to 4,800 members per annum.

The effect on operational costs for the next four years is expected to be:

Probability	Effect on operational costs
0.4	Increase to Sh.6,000 per annum per member.
0.6	Increase to Sh.8,000 per annum per member.

Any improvements are expected to last for four years.

Required:

- (i) Using the Expected Monetary Value (EMV) criterion, recommend the decision that Sawasawa Ltd should make. (9 marks)
- (ii) Advise on the maximum price that Sawasawa Ltd . should pay for perfect information about the upgrade of the exercise area. (4 marks)

- (b) Assume that ABC Ltd produces two products, product A and B and the following budget has been prepared.

	A	B	Total	
Sales in units	120,000	40,000	160,000	
	Sh.	Sh.	Sh.	
Sales @5/-, 10/-	600,000	400,000	1,000,000	
Variable cost @ 4/-, 3/-	<u>480,000</u>	<u>120,000</u>	<u>600,000</u>	Contribution @ 1/- 7/-
<u>120,000</u>	<u>280,000</u>	400,000		Total fixed cost
<u>300,000</u>				
Profit			<u>100,000</u>	

Required:

- Compute the break-even point in total and for each of the products. (5 marks)
 - The company proposes to change the sales mix in units to 1:1 for products A and B. Advice the Co. on whether this change is desirable. (8 marks)
- (c) Explain the limitations of linear programming as one of the methods of resource allocation. (4 marks)

QUESTION TWO (20 MARKS)

A firm produces two products, X and Y, with a contribution of Sh.8 and Sh.10 per unit respectively.

Product	Labour hours	Material A	Material B
X	3	4	6
Y	5	2	8
Total available	500	350	800

- Formulate the linear programming model. (8 marks)
- Solve the model using graphical method. (8 marks)
- Explain applications of linear programming (4 marks)

QUESTION THREE (20 MARKS)

(a) i) Explain the meaning and purpose of standard costing. (4 marks)

ii) Distinguish between a standard cost and budgeted cost.

(b) The standard cost for a production system in a given model is as follows:

Inputs	Std.Qty	Std price	std cost limit
Materials	3kg	Sh.4.00	Sh.2.00
Direct labour	2.5 Hours	Sh.14.00	Sh.35.00
Variable Overheads	2.5 Hours	Sh.3.00	Sh.7.50

During the month 6,500 kg of raw materials were purchased at Sh.3.80 per kg and all the material was used to produce 2000 units of finished products. 4,500 hours of direct labour time were used at a total cost of Sh.64,350. The actual variable overhead cost was Sh.13,950.

Required:

Compute the following variances:

- (i) Materials price variance. (2 marks)
- (ii) Materials efficiency (usage) variance. (2 marks)
- (iii) Total materials variance. (2 marks)
- (iv) Labour rate variance. (2 marks)
- (v) Labour efficiency variance. (2 marks)
- (vi) Total labour variance. (2 marks)
- (vii) Variable overhead rate variance. (2 marks)
- (viii) Variable overhead efficiency variance. (2 marks)
- (ix) Total overhead Variance. (2 marks)

QUESTION FOUR (20 MARKS)

- (a) Explain the limitations of profit planning in an organization. (6 marks)
- (b) A farmer feeds his pigs a mixture of Swill, Vitamins and a proprietary brand of feed mix. He owns 100 pigs who eat at least 20 kgs of food per day each. He would want to ensure that the animals receive a balanced diet, while at the same time looking at the cost. The following dietary and cost factors have been obtained.

		Vitamins			
		Calories	1	2	3
Minimum daily dietary					
requirements per pig	40	20	10	30	
Contents of foodstuffs		Costs			
Swill per kg(X1)	1.5	0.5	-	-	Sh.5/kg
Feed mix per kg(X2)	2.0	0.5	-	1	Sh.10/kg
Vitamins per bottle(X3)	--	0.5	7	14	Sh.20/bottle

Required:

Formulate the LP problem. (14 marks)

QUESTION FIVE (20 MARKS)

- (a) ABC Ltd operates on a 250 days year and provides with the following information :

Annual demand in units = 16,000.

Ordering cost per order= sh.60.

Holding cost per unit =Sh.120.

- (i) calculate the EOQ. (3 marks)
- (ii) Mean demand per day. (2 marks)
- (iii) Re-order level. (3 marks)

(b) Further the following information is also provided:

- Stock out costs per unit =Sh.1

Annual distribution of demand during lead time:

<u>Units</u>	<u>Probability</u>
0	0.05
150	0.1
300	0.1
450	0.15
600	0.25
750	0.15
900	0.1
1050	0.1

Required:

Determine the optimal level of safety stock and the revised re-order point for ABC Ltd.

(12 marks)