



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

**SCHOOL OF BUSINESS, ECONOMICS AND HOSPITALITY AND TOURISM
MANAGEMENT**

DEPARTMENT OF BUSINESS ADMINISTRATION AND FINANCE

FOURTH YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF COMMERCE (FINANCE OPTION)

BAC 403: MANAGEMENT ACCOUNTING II

DATE:

TIME:

INSTRUCTIONS

ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE (COMPULSORY)(30 MARKS)

- a) Midwest Precision Control Corporation is trying to decide between two alternate Order Plans for its inventory of a certain item. Irrespective of the plan to be followed, demand for the item is expected to be 1,000 units annually. In the 1st plan, Midwest would use a teletype for ordering; order costs would be Sh. 40 per order, Inventory holding costs (carrying cost) would be sh.100 per unit per annum. In the 2nd plan, order costs would be sh.30 per order, holding costs would 20% and unit Cost sh.480.

Required:

(10 marks)

EOQ and Total Inventory Cost, for each alternative plan and decide which Plan would result in the lowest total inventory cost.

- b). A large dairy firm, the Cow and Buffalo Company, buys bins every year, which it uses in the warehousing of its bottled products. A local vender has offered the following discount schedule for bins:

Order Quantity	Unit Price (Sh.)
Upto 699	10.00
700 to 949	9
950 and above	8

The average yearly replacement is 2000 bins. The carrying costs are 12% of the average inventory and ordering cost per order is Sh.100.

Required: determine the optimal order quantity. (12 marks)

- c) (i) Explain characteristics of a good transfer price (4 marks)
- (ii) XYZ Co. has two divisions, A and B. Division A has limited skilled labour and is operating at full capacity making product Y. It has been asked to supply a different product, X, to division B. Division B currently sources this product externally for sh.700 per unit. The same grade of materials and labour is used in both products. The cost cards for each product are shown below:

Product	Y (sh.)/unit	X (sh.)/unit
Selling price	600	-
Direct materials (sh.50 per kg)	200	150
Direct labour (sh.20 per hour)	80	120
Apportioned fixed overheads (sh.15 per hour)	60	90

- i) Using an opportunity cost approach to transfer pricing, what is the minimum transfer price? (4 marks)

QUESTION TWO (20 MARKS)

- a) A company has determined that the Economic Order Quantity (EOQ) for its only raw material is 2000 units every 30 days. The company knows with certainty that a four-day

lead time is required for ordering. The following is the probability distribution of the estimated usage of the raw material for the month of December 2019:

Usage (units)	probability
1800	0.06
1900	0.14
2000	0.30
2100	0.16
2200	0.13
2300	0.10
2400	0.07
2500	0.04

Stock-outs will cost the company sh.100 per unit and the average monthly holding cost will be sh.10 per unit.

Required:

- i) Determine the optimal safety stock. (10 marks)
 - ii) Compute the probability of being out of stock. (2 marks)
- b) A transport company has two types of trucks, Type A and Type B. Type A has a refrigerated capacity of 20 cubic meters and a non-refrigerated capacity of 40 cubic meters $40m^3$ while Type B has the same overall volume with equal sections for refrigerated and non-refrigerated stock. A grocer needs to hire trucks for the transport of 3000 cubic meters $3,000m^3$ of refrigerated stock and 4,000 cubic meters $4,000m^3$ of non-refrigerated stock. The cost per kilometer of a Type A is sh. 30, and sh.40 for Type B. How many trucks of each type should the grocer rent to achieve the minimum total cost?

Required: (8 marks)

- i) Formulate linear programming model.
- ii) Solve the linear programming model graphically.

QUESTION THREE (20 MARKS)

Bright stars, a private secondary school, is considering launching an A-level stream in the school. The following information relate to the decision:

- 1.The directors of the school consider that the enrolment in the A-level stream could be low, moderate or high with probabilities of 0.3, 0.6 and 0.1 respectively.
2. The directors of the school could either do nothing, build a small school or build a large school to cater for the A-level students.
- 3.Due to the nature of the problem and the likely reaction of competitors, the decision taken by the directors is considered irrecoverable.
- 4.The directors have requested the research manager to present estimates of the present value of the estimated profits with respect to each decision taken and the various states of nature.
5. The research manager has presented the following data:

Decision	Estimated profits (Sh.million)		
	State		
	Low	Moderate	High
Do nothing	0	0	6
Build a small school	-100	300	300
Build a large school	-200	200	800

6.One of the directors has suggested that Bright stars could hire a consultant at a cost of sh.25,000,000. The consultant would carry out a market survey and report on whether demand for the A-level stream would be poor, reasonable or good.

7. The directors have been presented with the following conditional probabilities based on previous surveys carried out by the consultant on behalf of the school:

Survey output

Real state of demand	Poor	Reasonable	Good
Low	0.8	0.1	0.1
Moderate	0.1	0.8	0.1
High	0	0.2	0.8

Required:

- i)The optimal decision based on the expected values.
- ii)Advise the directors on whether they should engage the service of the consultant.

QUESTION FOUR (20 MARKS)

A manufacturer incurred the following costs in a period for his single product:

	Sh.
Labour (25% variable)	8,000
Materials (100% Variable)	12,000
Selling costs (10% Variable)	2,000
Other costs (fixed)	<u>7,000</u>
Total cost	<u>29,000</u>

A normal period sales are 500 units at sh. 70 each, but up to 650 units could be made in a period.

Various alternatives are being considered:

- 1.Reduce the price to sh.63 each and sell all that could be made.
- 2.Increase the price to sh.80 each at which price sales would be 400 units.
- 3.Keep the present plan.

Required:

- a) Which is the most profitable plan?
- b) Assess the contribution for each plan.
- c) Establish point at which profit is zero for each alternative.

QUESTION FIVE (20 MARKS)

- a) A clothing company manufactures pullovers which it then sells to fashion retailers. In the month of May it expects to sell 5,000 pullovers for sh.12 each. The standard costing information for the pullovers is as follows:

Direct materials is 0.5kg wool per pullover at a standard cost of sh.1.80 per kg.

Direct labour is 0.25 hours per pullover at a standard cost of sh.9 per hour.

Variable overheads Sh.3 per pullover.

At the end of May it ascertained that:

6,000 pullovers were in fact produced and sold for a total revenue of sh.69,000.

2,800 kgs of wool were used in production at a total cost of Sh.5, 180.

1,800 hours of direct labour were used at a total cost of Sh.17, 100.

Sh.17, 400 of variable overheads were incurred.

Required:

(10 marks)

- i) compute the original budgeted profit in May.
 - ii) Calculate the flexed budgeted profit in May.
 - iii) Calculate the sales profit volume variance.
- b) Sunshine Ltd is a manufacturing company which produces and sells a single product known as T1 at a price of sh.10 per unit. The company incurs a variable cost of sh.6 per unit and fixed costs of sh.400,000. Sales are normally distributed with a mean of 110,000 units and a standard deviation of 10,000 units. The company is considering producing a second product, T2 to sell at sh.8 per unit and incur a variable cost of sh.5 per unit with additional fixed cost of sh.50,000. The demand for T2 is also normally distributed with a mean of 50,000 units and a standard deviation of 5,000 units. If T2 is added to the production schedule, sales of T1 will shift downwards to a mean of 85,000 units and a standard deviation of 8,000 units. The correlation between sales of T1 and T2 is -0.9.

Required:

- i) The company's break-even point for the current and proposed production schedules. (6 marks)
- ii) Assess the riskiness of the two proposals. (4 marks)