TECHNICAL UNIVERSITY OF MOMBASA
SCHOOL OF BUSINESS
DEPARTMENT OF ACCOUNTING AND FINANCE
UNIVERSITY EXAMINATION FOR:
BTCE, BTME ,BSEE, BSME &BSMA

BFI 4204: ECONOMICS AND ACCOUNTING FOR ENGINEERS
END OF SEMESTER EXAMINATION

SPECIAL/SUPPLEMENTARY EXAM 2025
TIME: 2 HOURS

INSTRUCTION: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS.

QUESTION ONE (COMPULSORY)

i) A furniture -making business manufactures quality furniture to customers' orders. It has three production departments and two service departments. Budgeted overhead costs for the coming year are as follows:

	Total
	Sh000
Rent and Rates	12,800
Machine Insurance	6,000
Telephone Charges	3,200
Depreciation	18,000
Production and supervisor's salaries	24,000
Heating and lighting	6,400
	70,400

The three production departments A ,B and C and the two service departments X and Y are housed in the business premises ,the details of which ,together with other statistics and information ,are given below.

Departments

	A	B	C	X	Y
Floor area occupied (sq .metres)	3000	1800	600	600	400
Machine value (sh million)	24	10	8	4	2
Direct labour hours budgeted	3200	1800	1000		
Labour rates per hour	3800	3500	3400	3000	3000

Allocated overheads:

Specific to each department

	A	B	C	X	Y
(Sh million)	2.8	1.7	1.2	0.8	0.6
Service Department X'S					
Costs apportioned	50%	25%	25%		
Service Department Y'S					
Costs apportioned	20%	30%	50%		

Required:

a) Prepare an overhead analysis sheet showing the overhead cost budgeted for each department, showing the basis of apportionment used, Also calculate suitable overhead absorption rates. **(9marks)**

b) Two pieces of furniture A and B are to be manufactured for customers. Direct costs are as follows:

	A	B
Direct materials	SH 154,000	Sh 108,000
Direct labour	20 hours Dept A	16 hours Dept A
	12 hours Dept B	10 hours Dept B
	10 hours Dept C	14 hours Dept C

Calculate the total cost for each of the two pieces of furniture.

(5marks)

c) If the firm quotes prices to customers that reflect a required profit of 25% on selling price, calculate the quoted selling price for each of the two pieces of furniture above. **(2marks)**

ii) (a)Discuss the main factors of production. **(10 marks)**

(b)Explain the meaning of mobility of factors of production. To what extent are factors of production mobile **(4 marks)**

(Total marks 30)

QUESTION TWO

Given the following demand function
$QX = 100 - 2P^2$

Required:

a) Calculate the price elasticity of demand when price is sh 200 and when price is sh 600 **(8 marks)**

b) Calculate the price elasticity of demand in the price range ksh 300 and ksh 500. **(5marks)**

c) If the current prevailing price is ksh 500 what advice would you give to the producer in order to increase his/her revenue and why? **(7 marks)**

(Total marks 20)

QUESTION THREE

The following economic functions have been serviced by the finance manager of the Kenya Tea Limited;

$Qa = 3P^2 - 4P$ and

$Qb = 24 - P^2$, where p represents price and Q is quantity.

Required

a)(i) Which of the functions represents a demand curve, supply curve and why? **(4marks)**

(ii) At what values of price and quantity is the market in equilibrium? **(6 marks)**

(b) Explain, with the aid of a diagram, the effect on the demand and supply functions indicated in (a) above of a simultaneous decrease in cost of production and an increase in the price of a complementary good. **(10 marks)**

QUESTION FOUR

Malindi co.ltd manufactures a single product, X, details of which are as follows.

Per unit	Sh
Selling price	180.00
Direct materials	40.00
Direct labour	16.00
Variable overheads	10.00

Annuals fixed production overheads are budgeted to be sh.1.6 million and the company expects to produce 1,280,000 units of product X each year. Overheads are absorbed on a per unit basis. Actual overheads are sh 1.6 million for the year.

Budgeted fixed selling costs are sh. 320,000 per quarter.

Actual sales and production units for the first quarter of 20 x 8 are given below

	Jan – March 20 X 8
Sales	240,000 units
Production	280,000 units

There is no opening inventory at the beginning of January.

Required;

Prepare income statements for the quarter-Jan-March 20x8, using

a) Marginal costing **(10 marks)**

b) Absorption costing **(10 marks)**

QUESTION FIVE

Lamu Co.Ltd operates an activity based costing (ABC)system and has forecast the following information for the next year.

Cost pool	**Cost sh000**	**Cost Driver**	**No. of Drivers**
Production set-ups	105,5000	Set-ups	300
Product testing	300,000	Tests	1,500
Component supply and storage	25,000	Component orders	500
Customer order and delivery	112,500	Customer orders	1000

General fixed overheads such as lighting and heating, which cannot be linked to any specific activity, are expected to be sh 900 million and these costs are absorbed on a direct labor hour basis .Total direct labor hours for next year are expected to be 300,000 hours.

The company expects orders from product Z next year to be 100 orders for 60 units per order and 60 orders for 50 units per order. The company holds no stocks of product Z and will need to produce the order requirement in production runs of 900 units. One order for components is placed prior to each production run. Four tests are made during each production run to ensure that quality standards are maintained. The following additional cost and profits information relates to product Z;

Component cost	Sh 1000 per unit
Direct labour	10 minutes per unit at sh 7,800 per hour
Profit mark up	40% of total unit cost

Required;

(a) Calculate the activity-based recovery rates for each cost pool. **(4 marks)**

(b) Calculate the total unit cost and selling price of product Z **(9 marks)**

(c) Discuss the reasons why activity based costing may be preferred to traditional absorption costing in the modern manufacturing environment **(7 marks)**

(Total marks 20)