



Cost and Management Accounting

Instructions to examinees:

- (i) Answer all NINE questions.
- (ii) Answer in **black** pen only.

Section A

- Q.1 Nigeria Limited (NL) is involved in trading of various consumer goods. It purchases one of its products 'Silver' from a local supplier in batches of 3,000 kg using the EOQ model. NL receives the delivery in two weeks of placing the order. Below are the details related to Silver's demand:

Demand during lead time (kg)	Probability
1,000	35%
1,500	45%
2,000	20%

Annual holding cost of Silver is Rs. 25 per kg and contribution margin is Rs. 10 per kg.

NL operates for 48 weeks each year.

Required:

Suggest which of the following reorder levels would be financially beneficial for NL:

- (i) Average demand during lead time
- (ii) 1,600 kg

(08)

- Q.2 Denmark Ice Cream (DIC) runs various ice cream parlors across the city. Below is the average weekly information extracted from DIC's records:

	Rs. in '000
Sales	500
Variable cost	(350)
Fixed cost	(100)
Profit	50

DIC is now planning to introduce frozen yogurt in addition to its existing ice cream range to attract more customers. In this regard, following information has been gathered:

- (i) Sale of 800 frozen yogurt cups every week is expected to be achieved at selling price of Rs. 190 per cup. It is expected that introduction of frozen yogurt would also increase the sales volume of ice cream by 10%.
- (ii) Variable cost of frozen yogurt will be Rs. 150 per cup.
- (iii) Fixed cost will increase by 12% due to launching of marketing campaign for frozen yogurt.
- (iv) DIC's target is to achieve a profit margin of 14% after introducing frozen yogurt.

Required:

- (a) Compute the cost gap.
- (b) Discuss the methods that DIC can use to close the cost gap identified in (a) above.

(03)

(04)

- Q.3 Argentina Limited (AL) is involved in the production of a single product 'Zinc' which requires highly skilled labour. AL's budgeted production for the year is 120,000 units. The break-up of existing variable cost per unit of Zinc is as follows:

	Rupees
Raw material (4 kg @ Rs. 100 per kg)	400
Skilled labour (1.5 hours @ Rs. 200 per hour)	300
Variable overheads	125
	825

Presently, there is a shortage of skilled labour in the market and consequently the management of AL foresees a high labour turnover. In case of high labour turnover, AL would be required to hire substitute labour at the existing wage rate which would cause the following inefficiencies:

- (i) Increase of raw material wastage from 4% to 5%.
- (ii) Increase of finished goods rejection rate from 3% to 4%. Rejected units are sold as scrap for Rs. 300 per unit.

In order to avoid the situation, the management is considering to revise the wage plan as follows:

- (i) Increase wages by 7%.
- (ii) Pay a premium of Rs. 70 per hour saved to skilled labour who manufactures the product in less than 1.5 hours.

The management believes that introduction of above wage plan would increase the efficiency of its existing skilled labour by 6%.

Required:

Determine whether AL should implement the proposed wage plan or hire substitute labour. **(08)**

- Q.4 Rio Limited (RL) operates donut shops in different parts of Karachi and has average monthly sales of Rs. 4.5 million per shop. RL earns contribution margin of 20%.

RL is now planning to open a shop in Lahore. In this respect, following two rental options are under consideration:

- (i) Annual rent of Rs. 2.52 million payable in advance.
- (ii) Monthly rent of Rs. 0.1 million plus 2% commission on total sales, payable at the end of each month.

Additional information:

- (i) RL would introduce customized donuts, in addition to the regular range. The price of customized donuts will be 15% higher than the regular ones.
- (ii) Average monthly sales volume of this shop is expected to be 30% higher than existing sales. 20% of the sales volume will consist of customized donuts.
- (iii) Variable costs consist of 75% cost of making regular donuts which would increase by 5% in case of customized donuts. The remaining variable costs represent packaging cost of all donuts which is expected to increase by 4%.
- (iv) Fixed costs (other than rent) is estimated at Rs. 0.8 million per month.
- (v) RL can borrow the required funds at 14% per annum.

Required:

Compute net profit per month and margin of safety percentage under both options and recommend the most suitable option to RL. **(10)**

- Q.5 California Limited (CL) runs a factory which has two production departments AB and AC, and two service departments SA and SB. CL allocates the cost of service departments using simultaneous equation method. A summary of budgeted overheads for the year ending 31 December 2022 is as follows:

	Rs. in '000
Factory rent	2,500
Fuel cost	1,800
Depreciation	2,000
Electricity and other utilities	1,100

Other related information is given below:

	Production department		Service department		Total
	AB	AC	SA	SB	
Machine hours	22,000	12,000	-	-	34,000
Labour hours	8,000	10,000	-	-	18,000
Floor area (square feet)	6,000	4,500	900	600	12,000
SA - % of services	40%	40%	-	20%	
SB - % of services	45%	40%	15%	-	
Basis of overhead absorption	Machine hours	Labour hours			

The per hour fuel consumption of machines in department AC is 50% more than that of machines in department AB.

Required:

Compute the departmental overhead absorption rate.

(08)

- Q.6 Spain Limited uses standard costing system. Below is a summary of variances occurred during the month of February 2022:

	Rupees
Favourable variances:	
Material price	15,000
Labour efficiency	12,000
Adverse variances:	
Fixed overheads expenditure	9,500
Material usage	14,000

Following information is also available:

- (i) Standard cost card per unit:

	Rupees
Direct material (Rs. 120 per kg)	360
Direct labour (Rs. 100 per hour)	200
Variable factory overheads	175
Fixed factory overheads	150

- (ii) 2,520 units were produced during the month.
 (iii) Direct material was purchased from a new supplier at a discount of 2% of standard material cost.
 (iv) Actual wages and actual fixed overheads were Rs. 510,000 and Rs. 380,000 respectively.

Required:

Calculate the following:

- (a) Actual material purchased (02)
 (b) Budgeted units (02)
 (c) Actual material used (02)
 (d) Actual labour hours (02)

Section B

Q.7 Assume that date today is 1 April 2022.

Zimbabwe Limited (ZL) has planned to shut down its factory in Karachi on 31 December 2022. On receiving the news of shut down, all skilled labour employed in the Karachi factory resigned in protest effective from 31 March 2022. This has raised concerns about the factory's ability to continue operations for the rest of the year.

Using the original budget document for the year 2022, following information has been extracted relating to the period from April 2022 to December 2022:

Production and sales (units)	50,000
	Rs. in '000
Sales	83,750
Direct material	(36,000)
Direct labour	(14,000)
Variable production overheads	(11,000)
Fixed production overheads	(12,000)
Selling expenses	(8,200)
Profit	2,550

Other related information:

- (i) Contractual sales represent 75% of the total budgeted sales volume, which have to be fulfilled on priority to avoid penalties. Selling price for contractual sales is 20% lower than the normal price. However, 5% trade discount to other customers has also been budgeted.
- (ii) Closing stock comprises of the following as on 31 March 2022:
 - Raw material stock of 10,000 kg costing Rs. 3.4 million
 - Defective 2,500 units costing Rs. 3.05 million which can be sold as scrap at Rs. 100 per unit
- (iii) Budgeted fixed production overheads include depreciation of Rs. 2.5 million, technical fee of Rs. 1.2 million (paid in advance) and salary of factory supervisor of Rs. 3.6 million. The remaining amount pertains to allocated general overheads.
- (iv) Selling expenses represent salaries of five sales officers hired from a third party on contract which will expire on 31 December 2022.
- (v) Plant and machinery costed Rs. 15 million and has an estimated resale value of Rs. 2.8 million as on 31 March 2022.

Keeping in view the resignation of skilled labour, the board of directors of ZL is considering the following two options for implementation with effect from 1 April 2022.

Option I: Close the factory now and rent out the factory space

- (i) Rental income of Rs. 20 million would be received for nine months.
- (ii) Penalties estimated at Rs. 3.8 million would have to be paid by ZL for its failure to fulfill contractual commitments.
- (iii) Closing raw material can be used by another factory of ZL by converting it into 9,000 kg of Rita at a processing cost of Rs. 140 per kg of input. Rita is available in the market at Rs. 350 per kg. Alternatively, the raw material can be sold in the market at Rs. 160 per kg.
- (iv) An amount equal to twelve months' salary would have to be paid to the factory supervisor.
- (v) On early termination of contract with third party for sales officers, a penalty of 30% of the remaining amount would have to be paid by ZL. Alternatively, this staff can be utilized at ZL's factory in Lahore. For this purpose, ZL would have to pay the staff relocation allowance of Rs. 2 million.

Option II: Continue operating the factory for the remaining nine months by employing skilled labour on contract

- (i) The contract for provision of skilled labour would not fulfill the entire requirement of ZL. Considering this constraint, it is estimated that ZL would be able to produce 45,000 units only in remaining nine months.
- (ii) Skilled labour would be hired at Rs. 500 per hour, however, due to lack of training, variable production overheads would be increased by 5%. In order to avoid this increase, ZL can provide training to the skilled labour at a cost of Rs. 0.45 million.
- (iii) Goods are produced in batches of 3,000 units each. The first batch would require 2,750 skilled labour hours. Learning curve effect is estimated at 90% that would remain effective for the first five batches only. At 90%, the index of learning curve is -0.152 .
- (iv) If the factory continues to operate, the resale value of plant and machinery at 31 December 2022 would be 80% of the current resale value.

Required:

Advise which of the two options would be financially beneficial for ZL.

(20)

Q.8 (a) Discuss the assumptions used in marginal costing.

(04)

- (b) Kenya Limited (KL) is involved in the manufacture of a single product and has a total production capacity of 60,000 units per month. It is currently operating at its normal capacity of 80% and uses **absorption costing**. Below is the extract from KL's budget for the month of February 2022:

	Rupees
Selling price per unit	210
Variable costs per unit:	
Prime cost	75
Factory overheads	45
Selling and admin expenses	15
Fixed costs:	
Factory overheads	2,016,000
Selling and admin expenses	800,000

Actual operating data for the month of February 2022:

- Due to an unexpected fault in KL's manufacturing plant, it was able to operate at 75% of its production capacity only.
- Sales of 47,000 units were made at the selling price budgeted by KL.
- Opening stock of 10,000 units costing Rs. 1,600,000 was held by KL. Fixed factory overheads were absorbed in prior month at the rate of Rs. 40 per unit.
- Fixed factory overheads exceeded the budget by Rs. 500,000 due to increase in electricity cost.

Required:

- (i) Prepare profit or loss statement for the month of February 2022 using marginal costing and absorption costing.
- (ii) Reconcile the difference in profits under the two methods.

(11)

(02)

- Q.9 Beijing Limited (BL) is engaged in manufacturing of a single product which passes through two processes. Following information relating to process II is extracted from BL's records for the month of February 2022:

	Rs. in '000
Opening work in process	3,000
Transferred from process I - 295,000 litres	21,000
Material - 200,000 litres	8,000
Labour	8,500
Overheads	3,200

Material is added at 60% completion of process II after inspection is carried out. Normal loss is estimated at 10% of the input. Conversion costs are incurred evenly throughout the process. Information related to opening and closing work in process and goods completed and transferred to finished goods are as follows:

Opening work in process		Closing work in process		Finished goods
Litres	Completion %	Litres	Completion %	Litres
40,000	40%	50,000	70%	450,500

The company uses FIFO method for inventory valuation.

Required:

Calculate the following for process II:

- (a) Quantity schedule and statement of equivalent production units. **(06)**
 (b) Cost of finished goods, closing work in process and abnormal gain/loss. **(08)**

(THE END)