

Test Series: April 2019

MOCK TEST PAPER –II
INTERMEDIATE (NEW): GROUP – I
PAPER – 3: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Question No. 1 is compulsory.

Attempt any **four** questions from the remaining **five** questions.

Working notes should form part of the answer.

Time Allowed – 3 Hours

Maximum Marks – 100

1. Answer the following:

- (a) Yamuna Ltd. manufactures a product, currently utilising 80% capacity with a turnover of Rs.8,00,000 at Rs.25 per unit. The cost data are as under:

Material cost Rs.7.50 per unit, Labour cost Rs.6.25 per unit

Semi-variable cost (Including variable cost of Rs.3.75) per unit Rs.1,80,000.

Fixed cost Rs. 90,000 upto 80% level of output, beyond this an additional Rs. 20,000 will be incurred.

CALCULATE:

- (i) Activity level at Break-Even-Point
(ii) Number of units to be sold to earn a net income of 8% of sales
(iii) Activity level needed to earn a profit of Rs. 95,000.
- (b) Madhu Ltd. has calculated a predetermined overhead rate of Rs.22 per machine hour for its Quality Check (QC) department. This rate has been calculated for the budgeted level of activity and is considered as appropriate for absorbing overheads. The following overhead expenditures at various activity levels had been estimated.

Total overheads	Number of machine hours
Rs.3,38,875	14,500
Rs.3,47,625	15,500
Rs.3,56,375	16,500

You are required to:

- (i) CALCULATE the variable overhead absorption rate per machine hour.
(ii) CALCULATE the estimated total fixed overheads.
(iii) CALCULATE the budgeted level of activity in machine hours.
(iv) CALCULATE the amount of under/over absorption of overheads if the actual machine hours were 14,970 and actual overheads were Rs.3,22,000.
(v) ANALYSE the arguments for and against using departmental absorption rates as opposed to a single or blanket factory wide rate.
- (c) Anirban Ltd. wants to ascertain the profit lost during the year 20X8-X9 due to increased labour turnover. For this purpose, they have given you the following information:

- (1) Training period of the new recruits is 50,000 hours. During this period their productivity is 60% of the experienced workers. Time required by an experienced worker is 10 hours per unit.
- (2) 20% of the output during training period was defective. Cost of rectification of a defective unit was Rs. 25.
- (3) Potential productive hours lost due to delay in recruitment were 1,00,000 hours.
- (4) Selling price per unit is Rs.180 and P/V ratio is 20%.
- (5) Settlement cost of the workers leaving the organization was Rs.1,83,480.
- (6) Recruitment cost was Rs.1,56,340
- (7) Training cost was Rs.1,13,180.

You are required to CALCULATE the profit lost by the company due to increased labour turnover during the year 20X8-X9.

- (d) Nirmal Motors Ltd. manufactures pistons used in car engines. As per the study conducted by the Auto Parts Manufacturers Association, there will be a demand of 80 million pistons in the coming year. Arnav Motors Ltd. is expected to have a market share of 1.15% of the total market demand of the pistons in the coming year. It is estimated that it costs Rs.150 as inventory holding cost per piston per month and that the set-up cost per run of piston manufacture is Rs. 3,50,000.
- (i) DETERMINE the optimum run size for piston manufacturing?
 - (ii) Assuming that the company has a policy of manufacturing 40,000 pistons per run, CALCULATE how much extra costs the company would be incurring as compared to the optimum run suggested in (i) above? **(4 × 5 = 20 Marks)**

2. (a) BBC Ltd. manufactures Ordinary Portland Cement (OPC). The standard data for the raw materials that are used to manufacture OPC are as follows:

Material	Composition (%)	Rate per Metric Ton (Rs.)
Limestone	65	565
Silica	20	4,800
Alumina	5	32,100
Iron ore	5	1,800
Others	5	2,400

During the month of February 20X8, A Ltd. produced 500 MT OPC. Actual data related with the consumption and costs are as follows:

Raw Material	Quantity (MT)	Total Cost (Rs.)
Limestone	340	1,90,400
Silica	105	5,09,250
Alumina	25	8,12,500
Iron ore	30	53,400
Others	23	51,750

You are required to COMPUTE the following variances related with the production of OPC for the month of February 20X8:

- (i) Material Price Variance

- (ii) Material Mix Variance
- (iii) Material Yield Variance
- (iv) Material Cost Variance.

(10 Marks)

- (b) Cimech Constructions Limited has entered into a big contract at an agreed price of Rs. 1,50,00,000 subject to an escalation clause for material and labour as spent out on the contract and corresponding actual are as follows:

Material:	Standard		Actual	
	Quantity	Rate per Ton	Quantity	Rate per Ton
	(Tons)	(Rs.)	(Tons)	(Rs.)
A	3,000	1,000	3,400	1,100
B	2,400	800	2,300	700
C	500	4,000	600	3,900
D	100	30,000	90	31,500
Labour:	Hours	Hourly Rate	Hours	Hourly Rate
		(Rs.)		(Rs.)
L ₁	60,000	15	56,000	18
L ₂	40,000	30	38,000	35

You are required to:

- (i) ANALYSE admissible escalation claim and DETERMINE the final contract price payable.
 - (ii) PREPARE the contract account, if the all expenses other than material and labour related to the contract are Rs. 13,45,000. **(10 Marks)**
3. (a) The following data are available in respect of Process-I for January 20X9:
- (1) Opening stock of work in process: 600 units at a total cost of Rs. 4,20,000.
 - (2) Degree of completion of opening work in process:

Material	100%
Labour	60%
Overheads	60%
 - (3) Input of materials at a total cost of Rs.55,20,000 for 9,200 units.
 - (4) Direct wages incurred Rs.18,60,000
 - (5) Production overhead Rs.8,63,000.
 - (6) Units scrapped 200 units. The stage of completion of these units was:

Materials	100%
Labour	80%
Overheads	80%
 - (7) Closing work in process; 700 units. The stage of completion of these units was:

Material	100%
Labour	70%
Overheads	70%

- (8) 8,900 units were completed and transferred to the next process.
 (9) Normal loss is 4% of the total input (opening stock plus units put in)
 (10) Scrap value is Rs.60 per unit.

You are required to:

- (i) COMPUTE equivalent production,
 (ii) CALCULATE the cost per equivalent unit for each element.
 (iii) CALCULATE the cost of abnormal loss (or gain), closing work in process and the units transferred to the next process using the FIFO method. **(10 Marks)**
- (b) 'Humara - Apna' bank offers three products, viz., deposits, Loans and Credit Cards. The bank has selected 4 activities for a detailed budgeting exercise, following activity based costing methods.

The bank wants to know the product wise total cost per unit for the selected activities, so that prices may be fixed accordingly.

The following information is made available to formulate the budget:

Activity	Present Cost (Rs.)	Estimation for the budget period
ATM Services: (a) Machine Maintenance (b) Rents (c) Currency Replenishment Cost	4,00,000 2,00,000 1,00,000 7,00,000	All fixed, no change. Fully fixed, no change. Expected to double during budget period. (This activity is driven by no. of ATM transactions)
Computer Processing	5,00,000	Half this amount is fixed and no change is expected. The variable portion is expected to increase to three times the current level. (This activity is driven by the number of computer transactions)
Issuing Statements	18,00,000	Presently, 3 lakh statements are made. In the budget period, 5 lakh statements are expected. For every increase of one lakh statement, one lakh rupees is the budgeted increase. (This activity is driven by the number of statements)
Computer Inquiries	2,00,000	Estimated to increase by 80% during the budget period. (This activity is driven by telephone minutes)

The activity drivers and their budgeted quantifies are given below:

Activity Drivers	Deposits	Loans	Credit Cards
No. of ATM Transactions	1,50,000	---	50,000
No. of Computer Processing Transactions	15,00,000	2,00,000	3,00,000
No. of Statements to be issued	3,50,000	50,000	1,00,000
Telephone Minutes	3,60,000	1,80,000	1,80,000

The bank budgets a volume of 58,600 deposit accounts, 13,000 loan accounts, and 14,000 Credit Card Accounts.

Required

- (i) CALCULATE the budgeted rate for each activity.
- (ii) PREPARE the budgeted cost statement activity wise.
- (iii) COMPUTE the budgeted product cost per account for each product using (i) and (ii) above. **(10 Marks)**

4. (a) Nakata Ltd a Vehicle manufacturer has prepared sales budget for the next few months, and the following draft figures are available:

Month	No. of vehicles
October	40,000
November	35,000
December	45,000
January	60,000
February	65,000

To manufacture a vehicle a standard cost of Rs.5,71,400 is incurred and sold through dealers at a uniform selling price of Rs.8,57,100 to customers. Dealers are paid 15% commission on selling price on sale of a vehicle.

Apart from other materials four units of Part - X are required to manufacture a vehicle. It is a policy of the company to hold stocks of Part-X at the end of each month to cover 40% of next month's production. 48,000 units of Part-X are in stock as on 1st October.

There are 9,500 nos. of completed vehicles are in stock as on 1st October and it is policy to have stocks at the end of each month to cover 20% of the next month's sales.

You are required to

- (i) PREPARE Production budget (in nos.) for the month of October, November, December and January.
 - (ii) PREPARE a Purchase budget for Part-X (in units) for the months of October, November and December.
 - (iii) CALCULATE the budgeted gross profit for the quarter October to December. **(10 Marks)**
- (b) R Limited showed a net loss of Rs.35,400 as per their cost accounts for the year ended 31st March, 20X8. However, the financial accounts disclosed a net profit of Rs.67,800 for the same period. The following information were revealed as a result of scrutiny of the figures of cost accounts and financial accounts:

		(Rs.)	(Rs.)
(i)	Administrative overhead under recovered	25,500	
(ii)	Factory overhead over recovered		1,35,000
(iii)	Depreciation under charged in Cost Accounts	26,000	
(iv)	Dividend received		20,000
(v)	Loss due to obsolescence charged in Financial Accounts	16,800	
(vi)	Income tax provided	43,600	
(vii)	Bank interest credited in Financial Accounts	13,600	
(viii)	Value of opening stock:		
	- In Cost Accounts	1,65,000	
	- In Financial Accounts	1,45,000	
(ix)	Value of closing stock:		
	- In Cost Accounts	1,25,500	
	- In Financial Accounts	1,32,000	
(x)	Goodwill written-off in Financial Accounts	25,000	
(xi)	Notional rent of own premises charged in Cost Accounts	60,000	
(xii)	Provision for doubtful debts in Financial Accounts	15,000	

PREPARE a reconciliation statement by taking costing net loss as base. **(10 Marks)**

5. (a) XYZ LLP, contractors and civil engineers, are building a new wing to a school. The quoted fixed price for the contract is Rs.30,00,000. Work commenced on 1st January 20X8 and is expected to be completed on schedule by 30 June 20X9.

Data relating to the contract at the year ended 31st March 20X9 is as follows.

	Amount (Rs.)
Plant sent to site at commencement of contract	2,40,000
Hire of plant and equipment	77,000
Materials sent to site	6,62,000
Materials returned from site	47,000
Direct wages paid	9,60,000
Wage related costs	1,32,000
Direct expenses incurred	34,000
Supervisory staff salaries - Direct	90,000
- Indirect	20,000
Regional office expenses apportioned to contract	50,000
Head office expenses apportioned to contract	30,000
Surveyor's fees	27,000
Progress payments received from school	18,00,000

Additional information:

- Plant is to be depreciated at the rate of 25 % per annum following straight line method, with no residual value.

2. Unused materials on site at 31st March are estimated at Rs. 50,000.
3. Wages owed to direct workers total Rs. 40,000
4. No profit in respect of this contract was included in the year ended 31st March 2016.
5. Budgeted profit on the contract is Rs. 8,00,000
6. Value of work certified by the surveyor is Rs. 24,00,000.
7. The surveyor has not certified the work costing Rs. 1,80,000

You are required to PREPARE the account for the school contract for the fifteen months ended 31st March 20X9, and CALCULATE the notional profit to date. **(10 Marks)**

- (b) A Ltd. produces a product 'Exe' using a raw material Dee. To produce one unit of Exe, 2 kg of Dee is required. As per the sales forecast conducted by the company, it will be able to sell 20,000 units of Exe in the coming year. The following is the information regarding the raw material Dee:

- (i) The Re-order quantity is 200 kg. less than the Economic Order Quantity (EOQ).
- (ii) Maximum consumption per day is 20 kg. more than the average consumption per day.
- (iii) There is an opening stock of 2,000 kg.
- (iv) Time required to get the raw materials from the suppliers is 4 to 8 days.
- (v) The purchase price is Rs.125 per kg.

There is an opening stock of 1,800 units of the finished product Exe.

The rate of interest charged by bank on Cash Credit facility is 13.76%.

To place an order company has to incur Rs. 720 on paper and documentation work.

From the above information COMPUTE the followings in relation to raw material Dee:

- (a) Re-order Quantity
- (b) Maximum Stock level
- (c) Minimum Stock level
- (d) Impact on the profitability of the company by not ordering the EOQ.

[Take 364 days for a year]

(10 Marks)

6. (a) DISCUSS the accounting treatment of Idle time and overtime wages.
(b) EXPLAIN the difference between Cost Control and Cost Reduction
(c) STATE Direct Expenses with examples.
(d) EXPLAIN the difference between product cost and period cost.

(4 × 5 =20 Marks)

MOCK TEST PAPER – 2
INTERMEDIATE (NEW): GROUP – I
PAPER – 3: COST MANAGEMENT ACCOUNTING
SUGGESTED ANSWERS/HINTS

1. (a) Working notes:

1. (i) Number of units sold at 80% capacity
$$= \frac{\text{Turnover}}{\text{Selling price p.u.}} = \frac{\text{Rs. 8,00,000}}{\text{Rs. 25}} = 32,000 \text{ units.}$$
- (ii) Number of units sold at 100% capacity
$$\frac{\text{Rs. 32,000 units}}{80} \times 100 = 40,000 \text{ units}$$
2. Component of fixed cost included in semi-variable cost of 32,000 units.
Fixed cost = { Total semi-variable cost – Total variable cost }
$$= \text{Rs. 1,80,000} - 32,000 \text{ units} \times \text{Rs. 3.75}$$
$$= \text{Rs. 1,80,000} - \text{Rs. 1,20,000}$$
$$= \text{Rs. 60,000}$$
3. (i) Total fixed cost at 80% capacity
$$= \text{Fixed cost} + \text{Component of fixed cost included in semi—variable cost}$$

(Refer to working note 2)

$$= \text{Rs. 90,000} + \text{Rs. 60,000} = \text{Rs. 1,50,000}$$

(ii) **Total fixed cost beyond 80% capacity**
$$= \text{Total fixed cost at 80% capacity} + \text{Additional fixed cost to be incurred}$$
$$= \text{Rs. 1,50,000} + \text{Rs. 20,000} = \text{Rs. 1,70,000}$$

4. **Variable cost and contribution per unit**
Variable cost per unit = Material cost + Labour cost + Variable cost component in semi variable cost = Rs.7.50 + Rs.6.25 + Rs.3.75 = Rs.17.50
Contribution per unit = Selling price per unit – Variable cost per unit
$$= \text{Rs. 25} - \text{Rs. 17.50} = \text{Rs. 7.50}$$

5. **Profit at 80% capacity level**
$$= \text{Sales revenue} - \text{Variable cost} - \text{Fixed cost}$$
$$= \text{Rs. 8,00,000} - \text{Rs. 5,60,000} (32,000 \text{ units} \times \text{Rs. 17.50}) - \text{Rs. 1,50,000}$$
$$= \text{Rs. 90,000}$$

(i) **Activity level at Break–Even Point**
$$\text{Break-even point (units)} = \frac{\text{Fixed cost}}{\text{Contribution per unit}} = \frac{\text{Rs. 1,50,000}}{\text{Rs. 7.50}} = 20,000 \text{ units}$$

(Refer to working notes 3 & 4)

$$\text{Activity level at BEP} = \frac{\text{Break-Even point (units)}}{\text{No. of units at 100\% capacity level}} \times 100$$

(Refer to working note 1(ii))

$$= \frac{20,000 \text{ units}}{40,000 \text{ units}} \times 100 = 50\%$$

(ii) Number of units to be sold to earn a net income of 8% of sales

Let S be the number of units sold to earn a net income of 8% of sales.

Mathematically it means that : (Sales revenue of S units)

$$= \text{Variable cost of S units} + \text{Fixed cost} + \text{Net income}$$

$$\text{Or, Rs.}25S = \text{Rs.}17.5S + \text{Rs.}1,50,000 + \frac{8}{100} \times (\text{Rs.}25S)$$

$$\text{Or, Rs.}25S = \text{Rs.}17.5S + \text{Rs.}1,50,000 + \text{Rs.}2S$$

$$\text{Or, S} = (\text{Rs.}1,50,000/\text{Rs.}5.5) \text{ units}$$

$$\text{Or, S} = 27,273 \text{ units.}$$

(iii) Activity level needed to earn a profit of Rs. 95,000

The profit at 80% capacity level, is Rs. 90,000 which is less than the desired profit of Rs. 95,000, therefore the needed activity level would be more than 80%. Thus the fixed cost to be taken to determine the activity level needed should be Rs.1,70,000 (Refer to Working Note 3 (ii))

Units to be sold to earn a profit of Rs.95,000

$$= \frac{\text{Fixed cost} + \text{Desired profit}}{\text{Contribution per unit}}$$

$$= \frac{\text{Rs.}1,70,000 + \text{Rs.}95,000}{\text{Rs.}7.5}$$

$$= 35,333.33 \text{ units}$$

Activity level needed to earn a profit of Rs.95,000

$$= \frac{35,333.33 \text{ units}}{40,000 \text{ units}} \times 100 = 88.33\%$$

(b) (i) Variable overhead absorption rate = $\frac{\text{Difference in Total Overheads}}{\text{Difference in levels in terms of machine hours}}$

$$= \frac{\text{Rs.}3,47,625 - \text{Rs.}3,38,875}{15,500 \text{ hours} - 14,500 \text{ hours}} = \text{Rs.}8.75 \text{ per machine hour.}$$

(ii) Calculation of Total fixed overheads:

	(Rs.)
Total overheads at 14,500 hours	3,38,875
Less: Variable overheads (Rs. 8.75 × 14,500)	(1,26,875)
Total fixed overheads	2,12,000

(iii) Calculation of Budgeted level of activity in machine hours:

Let budgeted level of activity = X

$$\text{Then, } \frac{(\text{Rs. } 8.75X + \text{Rs. } 2,12,000)}{X} = \text{Rs. } 22$$

$$8.75X + \text{Rs. } 2,12,000 = 22X$$

$$13.25X = 2,12,000$$

$$X = 16,000$$

Thus, budgeted level of activity = 16,000 machine hours.

(iv) Calculation of Under / Over absorption of overheads:

	(Rs.)
Actual overheads	3,22,000
Absorbed overheads (14,970 hours × Rs. 22 per hour)	3,29,340
Over-absorption (3,29,340 – 3,22,000)	7,340

(v) Departmental absorption rates provide costs which are more precise than those provided by the use of blanket absorption rates. Departmental absorption rates facilitate variance analysis and cost control. The application of these rates make the task of stock and work-in-process (WIP) valuation easier and more precise. However, the setting up and monitoring of these rates can be time consuming and expensive.

(c) Output by experienced workers in 50,000 hours = $\frac{50,000}{10} = 5,000$ units

∴ Output by new recruits = 60% of 5,000 = 3,000 units

Less of output = 5,000 – 3,000 = 2,000 units

Total loss of output = 10,000 + 2,000 = 12,000 units

Contribution per unit = 20% of 180 = Rs. 36

Total contribution cost = 36 × 12,000 = Rs. 4,32,000

Cost of repairing defective units = 3,000 × 0.2 × 25 = Rs. 15,000

Profit forgone due to labour turnover

	(Rs.)
Loss of Contribution	4,32,000
Cost of repairing defective units	15,000
Recruitment cost	1,56,340
Training cost	1,13,180
Settlement cost of workers leaving	1,83,480
Profit forgone in 20X8-X9	9,00,000

(d) (i) Optimum run size or Economic Batch Quantity (EBQ) = $\sqrt{\frac{2 \times D \times S}{C}}$

Where, D = Annual demand i.e. 1.15% of 8,00,00,000 = 9,20,000 units

S = Set-up cost per run = Rs. 3,50,000

$$C = \text{Inventory holding cost per unit per annum} \\ = \text{Rs.150} \times 12 \text{ months} = \text{Rs. 1,800}$$

$$\text{EBQ} = \sqrt{\frac{2 \times 9,20,000 \text{ units} \times \text{Rs.3,50,000}}{\text{Rs.1,800}}} = 18,915 \text{ units}$$

(ii) Calculation of Total Cost of set-up and inventory holding

	Batch size	No. of set-ups	Set-up Cost (Rs.)	Inventory holding cost (Rs.)	Total Cost (Rs.)
A	40,000 units	23 $\left(\frac{9,20,000}{40,000}\right)$	80,50,000 (23×Rs.3,50,000)	3,60,00,000 $\left(\frac{40,000 \times \text{Rs.1,800}}{2}\right)$	4,40,50,000
B	18,915 units	49 $\left(\frac{9,20,000}{18,915}\right)$	1,71,50,000 (49×Rs.3,50,000)	1,70,23,500 $\left(\frac{18,915 \times \text{Rs.1,800}}{2}\right)$	3,41,73,500
	Extra Cost (A – B)				98,76,500

2. (a) (i) Material Price Variance = Actual Quantity (Std. Price – Actual Price)

Limestone	=	340	$\left(\text{Rs.565} - \frac{\text{Rs.1,90,400}}{340}\right)$	
	=	340	(Rs. 565 - Rs. 560)	= 1,700 (F)
Silica	=	105	$\left(\text{Rs.4,800} - \frac{\text{Rs.5,09,250}}{105}\right)$	
	=	105	(Rs. 4,800 - Rs. 4,850)	= 5,250 (A)
Alumina	=	25	$\left(\text{Rs.32,100} - \frac{\text{Rs.8,12,500}}{25}\right)$	
	=	25	(Rs. 32,100 - Rs. 32,500)	= 10,000 (A)
Iron ore	=	30	$\left(\text{Rs.1,800} - \frac{\text{Rs.53,400}}{30}\right)$	
	=	30	(Rs. 1,800 - Rs. 1,780)	= 600 (F)
Others	=	23	$\left(\text{Rs.2,400} - \frac{\text{Rs.51,750}}{23}\right)$	
	=	23	(Rs. 2,400 - Rs. 2,250)	= 3,450 (F)
				<u>9,500 (A)</u>

(ii) Material Mix Variance = Std. Price (Revised Std. Quantity – Actual Quantity)

Limestone	=	Rs. 565 (523 × 65% - 340)	
	=	Rs. 565 (339.95 - 340)	= 28.25 (A)
Silica	=	Rs. 4,800 (523 × 20% - 105)	
	=	Rs. 4,800 (104.6 - 105)	= 1,920 (A)
Alumina	=	Rs. 32,100 (523 × 5% - 25)	

	=	Rs. 32,100 (26.15 - 25)	= 36,915 (F)
Iron ore	=	Rs. 1,800 (523 × 5% - 30)	
	=	Rs. 1,800 (26.15 - 30)	= 6,930 (A)
Others	=	Rs. 2,400 (523 × 5% - 23)	
	=	Rs. 2,400 (26.15 - 23)	= 7,560 (F)
			35,596.75 (F)

(iii) Material Yield Variance = Std. Price (Standard Quantity – Revised Std. Quantity)

Limestone	=	Rs. 565 (500 × 65% - 523 × 65%)	
	=	Rs. 565 (325 - 339.95)	= 8,446.75 (A)
Silica	=	Rs. 4,800 (500 × 20% - 523 × 20%)	
	=	Rs. 4,800 (100 - 104.6)	= 22,080 (A)
Alumina	=	Rs. 32,100 (500 × 5% - 523 × 5%)	
	=	Rs. 32,100 (25 - 26.15)	= 36,915 (A)
Iron ore	=	Rs. 1,800 (500 × 5% - 523 × 5%)	
	=	Rs. 1,800 (25 - 26.15)	= 2,070 (A)
Others	=	Rs. 2,400 (500 × 5% - 523 × 5%)	
	=	Rs. 2,400 (25 - 26.15)	= 2,760 (A)
			72,271.75 (A)

(iv) Material Cost Variance = (Std. Quantity × Std. Price) – (Actual Quantity × Actual Price)

Limestone	=	Rs. 565 × (500 × 65%) - Rs. 1,90,400	
	=	Rs. 1,83,625 - Rs. 1,90,400	= 6,775 (A)
Silica	=	Rs. 4,800 × (500 × 20%) - Rs. 5,09,250	
	=	Rs. 4,80,000 – Rs. 5,09,250	= 29,250 (A)
Alumina	=	Rs. 32,100 (500 × 5%) – Rs. 8,12,500	
	=	Rs. 8,02,500 – Rs. 8,12,500	= 10,000 (A)
Iron ore	=	Rs. 1,800 (500 × 5%) – Rs. 53,400	
	=	Rs. 45,000 – Rs. 53,400	= 8,400 (A)
Others	=	Rs. 2,400 (500 × 5%) – Rs. 51,750	
	=	Rs. 60,000 – Rs. 51,750	= 8,250 (F)
			46,175 (A)

(b) In case of escalation clause in a contract, a contractor is paid for the any increase in price of materials and rate of labours which are beyond the control of the contractor. Any increase in the cost due to inefficiencies in usage of the materials and labours are not admissible. Thus any increase in cost due to usage in excess of standard quantity or hours are not paid.

(i) **Statement showing Additional claim due to Escalation clause.**

	Standard Qty / Hours	Std. Rate (Rs.)	Actual Rate (Rs.)	Variation in Rate (Rs.)	Escalation claim (Rs.)
	(a)	(b)	(c)	(d) = (c-b)	(e) = (a × d)
Material:					

A	3,000	1,000	1,100	+100	+3,00,000
B	2,400	800	700	-100	-2,40,000
C	500	4,000	3,900	-100	-50,000
D	100	30,000	31,500	+1,500	+1,50,000
Material escalation claim					1,60,000
Labour:					
L ₁	60,000	15	18	+3	+1,80,000
L ₂	40,000	30	35	+5	+2,00,000
Labour escalation claim					3,80,000

Statement showing Final Contract Price

	(Rs.)	(Rs.)
Agreed contract price		1,50,00,000
Add: Agreed escalation claim:		
Material Cost	1,60,000	
Labour Cost	3,80,000	5,40,000
Final Contract Price		1,55,40,000

(ii) Contract Account

Dr Cr.

Particulars	(Rs.)	Particulars	(Rs.)
To Material:		By Contractee's A/c	1,55,40,000
A – (3,400 × Rs. 1,100)	37,40,000		
B – (2,300 × Rs. 700)	16,10,000		
C – (600 × Rs. 3,900)	23,40,000		
D – (90 × Rs. 31,500)	28,35,000		
	1,05,25,000		
To Labour:			
L ₁ – (56,000 × Rs.18)	10,08,000		
L ₂ – (38,000 × Rs.35)	13,30,000		
	23,38,000		
To Other expenses	13,45,000		
To Estimated Profit	13,32,000		
	1,55,40,000		1,55,40,000

3. (a) (i) Statement of Equivalent Production (FIFO Method)

Input		Output		Equivalent Production					
				Materials		Labour		Production Overhead	
Details	Units	Details	Units	%	Units	%	Units	%	Units
Opening Stock	600	From opening stock	600	-	-	40	240	40	240
		- From fresh materials	8,300	100	8,300	100	8,300	100	8,300
		Closing W-I-P	700	100	700	70	490	70	490
Fresh inputs	9,200	Normal loss	392	-	-	-	-	-	-

			9,992		9,000		9,030		9,030
		Less: Abnormal Gain	(192)	100	(192)	100	(192)	100	(192)
	9,800		9,800		8,808		8,838		8,838

(ii) Statement of Cost per equivalent units

Elements	(Rs.)	Cost (Rs.)	Equivalent units (EU)	Cost per EU (Rs.)
Material Cost	55,20,000			
Less: Scrap realisation 392 units @ Rs. 60/- p.u.	(2,3520)	54,96,480	8,808	624.03
Labour cost		18,60,000	8,838	210.45
Production OH Cost		8,63,000	8,838	97.65
Total Cost		82,19,480		932.13

(iii) Cost of Abnormal Gain – 192 Units

	(Rs.)	(Rs.)
Material cost of 192 units @ Rs. 624.03 p.u.		
	1,19,813.76	
Labour cost of 192 units @ Rs. 210.45 p.u.	40,406.40	
Production OH cost of 192 units @ Rs. 97.65 p.u.	18,748.80	1,78,968.96

Cost of closing WIP – 700 Units

Material cost of 700 equivalent units @ Rs. 624.03 p.u.	4,36,821.00	
Labour cost of 490 equivalent units @ Rs. 210.45 p.u.	1,03,120.50	
Production OH cost of 490 equivalent @ Rs. 97.65 p.u.	47,848.50	5,87,790.00

Cost of 8,900 units transferred to next process

(i) Cost of opening W-I-P Stock b/f – 600 units	4,20,000.00
(ii) Cost incurred on opening W-I-P stock	
Material cost	—
Labour cost 240 equivalent units @ Rs. 210.45 p.u.	50,508.00
Production OH cost 240 equivalent units @ Rs 97.65 p.u.	<u>23,436.00</u>
	<u>4,93,944.00</u>
(iii) Cost of 8,300 completed units	
8,300 units @ Rs. 932.13 p.u.	<u>77,36,679.00</u>
Total cost [(i) + (ii) + (iii)]	<u>86,50,623.00</u>

(b) Statement Showing “Budgeted Cost per unit of the Product”

Activity	Activity Cost (Budgeted) (Rs.)	Activity Driver	No. of Units of Activity Driver (Budget)	Activity Rate (Rs.)	Deposits	Loans	Credit Cards
ATM Services	8,00,000	No. of ATM Transaction	2,00,000	4.00	6,00,000	---	2,00,000
Computer Processing	10,00,000	No. of Computer Transaction	20,00,000	0.50	7,50,000	1,00,000	1,50,000
Issuing Statements	20,00,000	No. of Statements	5,00,000	4.00	14,00,000	2,00,000	4,00,000
Customer Inquiries	3,60,000	Telephone Minutes	7,20,000	0.50	1,80,000	90,000	90,000
Budgeted Cost	41,60,000				29,30,000	3,90,000	8,40,000
Units of Product (as estimated in the budget period)					58,600	13,000	14,000
Budgeted Cost per unit of the product					50	30	60

Working Note

Activity	Budgeted Cost (Rs.)	Remark
ATM Services:		
(a) Machine Maintenance	4,00,000	- All fixed, no change.
(b) Rents	2,00,000	- Fully fixed, no change.
(c) Currency Replenishment Cost	2,00,000	- Doubled during budget period.
Total	8,00,000	
Computer Processing	2,50,000	- Rs.2,50,000 (half of Rs.5,00,000) is fixed and no change is expected.
	7,50,000	- Rs.2,50,000 (variable portion) is expected to increase to three times the current level.
Total	10,00,000	
Issuing Statements	18,00,000	- Existing.
	2,00,000	- 2 lakh statements are expected to be increased in budgeted period. For every increase of one lakh statement, one lakh rupees is the budgeted increase.
Total	20,00,000	
Computer Inquiries	3,60,000	- Estimated to increase by 80% during the budget period. (Rs.2,00,000 x 180%)
Total	3,60,000	

4. (a) (i) Preparation of Production Budget (in units)

	October	November	December	January
Demand for the month (Nos.)	40,000	35,000	45,000	60,000
Add: 20% of next month's demand	7,000	9,000	12,000	13,000
Less: Opening Stock	(9,500)	(7,000)	(9,000)	(12,000)
Vehicles to be produced	37,500	37,000	48,000	61,000

(ii) Preparation of Purchase budget for Part-X

	October	November	December
Production for the month (Nos.)	37,500	37,000	48,000
Add: 40% of next month's production	14,800 (40% of 37,000)	19,200 (40% of 48,000)	24,400 (40% of 61,000)
	52,300	56,200	72,400
No. of units required for production	2,09,200 (52300 × 4 units)	2,24,800 (56200 × 4 units)	2,89,600 (72,400 × 4 units)
Less: Opening Stock	(48,000)	(59,200) (14800 × 4 units)	(76,800) (19200 × 4 units)
No. of units to be purchased	1,61,200	1,65,600	2,12,800

(iii) Budgeted Gross Profit for the Quarter October to December

	October	November	December	Total
Sales in nos.	40,000	35,000	45,000	1,20,000
Net Selling Price per unit*	7,28,535	7,28,535	7,28,535	
Sales Revenue (Rs. in lakh)	2,91,414	2,54,987.25	3,27,840.75	8,74,242
Less: Cost of Sales (Rs. in lakh) (Sales unit × Cost per unit)	2,28,560	1,99,990.00	2,57,130.00	6,85,680
Gross Profit (Rs. in lakh)	62,854	54,997.25	70,710.75	1,88,562

* Net Selling price unit = Rs. 8,57,100 – 15% commission on Rs. 8,57,100
= Rs.7,28,535.

(b) Statement of Reconciliation

Sl. No.	Particulars	Amount (Rs.)	Amount (Rs.)
	Net loss as per Cost Accounts		(35,400)
	Additions		
1.	Factory O/H over recovered	1,35,000	
2.	Dividend Received	20,000	
3.	Bank Interest received	13,600	
4.	Difference in Value of Opening Stock (1,65,000 – 1,45,000)	20,000	
5.	Difference in Value of Closing Stock	6,500	

	(1,32,000 – 1,25,500)		
6.	Notional Rent of own Premises	60,000	2,55,100
	Deductions		
1.	Administration O/H under recovered	25,500	
2.	Depreciation under charged	26,000	
3.	Loss due to obsolescence	16,800	
4.	Income tax Provided	43,600	
5.	Goodwill written-off	25,000	
6.	Provision for doubtful debts	15,000	(1,51,900)
	Net Profit as per Financial A/c.		67,800

5. (a) School Contract Account

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
To Plant	2,40,000	By Material returned	47,000
To Hire of plant	77,000	By Plant c/d	1,65,000
To Materials	6,62,000	By Materials c/d	50,000
To Direct wages 9,60,000		By WIP c/d:	
Add: Accrued 40,000	10,00,000	Value of work certified	24,00,000
To Wages related costs	1,32,000	Cost of work not certified	1,80,000
To Direct expenses	34,000		
To Supervisory staff:			
Direct 90,000			
Indirect 20,000	1,10,000		
To Regional office expenses	50,000		
To Head office expenses	30,000		
To Surveyors' fees	27,000		
To Notional profit c/d	4,80,000		
	28,42,000		28,42,000

(b) Working Notes:

(i) Computation of Annual consumption & Annual Demand for raw material 'Dee':

Sales forecast of the product 'Exe'	20,000 units
Less: Opening stock of 'Exe'	1,800 units
Fresh units of 'Exe' to be produced	18,200 units
Raw material required to produce 18,200 units of 'Exe' (18,200 units × 2 kg.)	36,400 kg.
Less: Opening Stock of 'Dee'	2,000 kg.
Annual demand for raw material 'Dee'	34,400 kg.

(ii) **Computation of Economic Order Quantity (EOQ):**

$$\begin{aligned} \text{EOQ} &= \sqrt{\frac{2 \times \text{Annual demand of 'Dee'} \times \text{Ordering cost}}{\text{Carrying cost per unit per annum}}} \\ &= \sqrt{\frac{2 \times 34,400 \text{ kg.} \times \text{Rs. 720}}{\text{Rs. 125} \times 13.76\%}} = \sqrt{\frac{2 \times 34,400 \text{ kg.} \times \text{Rs. 720}}{\text{Rs. 17.2}}} = 1,697 \text{ kg.} \end{aligned}$$

(iii) **Re- Order level:**

= (Maximum consumption per day × Maximum lead time)

$$= \left\{ \left(\frac{\text{Annual Consumption of 'Dee'}}{364 \text{ days}} + 20 \text{ kg.} \right) \times 8 \text{ days} \right\}$$

$$= \left\{ \left(\frac{36,400 \text{ kg.}}{364 \text{ days}} + 20 \text{ kg.} \right) \times 8 \text{ days} \right\} = 960 \text{ kg.}$$

(iv) **Minimum consumption per day of raw material 'Dee':**

Average Consumption per day = 100 kg.

Hence, Maximum Consumption per day = 100 kg. + 20 kg. = 120 kg.

So, Minimum consumption per day will be

$$\text{Average Consumption} = \frac{\text{Min. consumption} + \text{Max. consumption}}{2}$$

$$\text{Or, } 100 \text{ kg.} = \frac{\text{Min. consumption} + 120 \text{ kg.}}{2}$$

$$\text{Or, } \text{Min. consumption} = 200 \text{ kg} - 120 \text{ kg.} = 80 \text{ kg.}$$

(a) **Re-order Quantity:**

$$\text{EOQ} - 200 \text{ kg.} = 1,697 \text{ kg.} - 200 \text{ kg.} = 1,497 \text{ kg.}$$

(b) **Maximum Stock level:**

$$= \text{Re-order level} + \text{Re-order Quantity} - (\text{Min. consumption per day} \times \text{Min. lead time})$$

$$= 960 \text{ kg.} + 1,497 \text{ kg.} - (80 \text{ kg.} \times 4 \text{ days})$$

$$= 2,457 \text{ kg.} - 320 \text{ kg.} = 2,137 \text{ kg.}$$

(c) **Minimum Stock level:**

$$= \text{Re-order level} - (\text{Average consumption per day} \times \text{Average lead time})$$

$$= 960 \text{ kg.} - (100 \text{ kg.} \times 6 \text{ days}) = 360 \text{ kg.}$$

(d) **Impact on the profitability of the company by not ordering the EOQ.**

		When purchasing the ROQ	When purchasing the EOQ
I	Order quantity	1,497 kg.	1,697 kg.
II	No. of orders a year	$\frac{34,400 \text{ kg.}}{1,497 \text{ kg.}} = 22.9$ or 23 orders	$\frac{34,400 \text{ kg.}}{1,697 \text{ kg.}} = 20.27$ or 21 orders
III	Ordering Cost	23 orders × Rs. 720 = Rs.16,560	21 orders × Rs. 720 = Rs.15,120

IV	Average Inventory	$\frac{1,497 \text{ kg.}}{2} = 748.5 \text{ kg.}$	$\frac{1,697 \text{ kg.}}{2} = 848.5 \text{ kg.}$
V	Carrying Cost	748.5 kg. × Rs. 17.2 = Rs.12,874.2	848.5 kg. × Rs. 17.2 = Rs.14,594.2
VI	Total Cost	Rs. 29,434.20	Rs. 29,714.20

Cost saved by not ordering EOQ = Rs. 29,714.20 - Rs. 29,434.20 = Rs.280.

6. (a) **Accounting treatment of idle time wages & overtime wages in cost accounts:** Normal idle time is treated as a part of the cost of production. Thus, in the case of direct workers, an allowance for normal idle time is built into the labour cost rates. In the case of indirect workers, normal idle time is spread over all the products or jobs through the process of absorption of factory overheads.

Under Cost Accounting, the overtime premium is treated as follows:

If overtime is resorted to at the desire of the customer, then the overtime premium may be charged to the job directly.

If overtime is required to cope with general production program or for meeting urgent orders, the overtime premium should be treated as overhead cost of particular department or cost center which works overtime.

Overtime worked on account of abnormal conditions should be charged to costing Profit & Loss Account.

If overtime is worked in a department due to the fault of another department the overtime premium should be charged to the latter department.

(b)

Cost Control	Cost Reduction
1. Cost control aims at maintaining the costs in accordance with the established standards.	1. Cost reduction is concerned with reducing costs. It challenges all standards and endeavours to better them continuously
2. Cost control seeks to attain lowest possible cost under existing conditions.	2. Cost reduction recognises no condition as permanent, since a change will result in lower cost.
3. In case of cost control, emphasis is on past and present	3. In case of cost reduction, it is on present and future.
4. Cost control is a preventive function	4. Cost reduction is a corrective function. It operates even when an efficient cost control system exists.
5. Cost control ends when targets are achieved.	5. Cost reduction has no visible end.

- (c) Expenses other than direct material cost and direct employee cost, which are incurred to manufacture a product or for provision of service and can be directly traced in an economically feasible manner to a cost object. The following costs are examples for direct expenses:

- (a) Royalty paid/ payable for production or provision of service;
- (b) Hire charges paid for hiring specific equipment;
- (c) Cost for product/ service specific design or drawing;
- (d) Cost of product/ service specific software;

- (e) Other expenses which are directly related with the production of goods or provision of service.
- (d) **Product costs** are those costs that are identified with the goods purchased or produced for resale. In a manufacturing organisation they are attached to the product and that are included in the inventory valuation for finished goods, or for incomplete goods. Product cost is also known as inventoriable cost. Under absorption costing method it includes direct material, direct labour, direct expenses, directly attributable costs (variable and non-variable) and other production (manufacturing) overheads. Under marginal costing method Product Costs includes all variable production costs and the all fixed costs are deducted from the contribution.
- Periods costs** are the costs, which are not assigned to the products but are charged as expense against revenue of the period in which they are incurred. General Administration, marketing, sales and distributor overheads are recognized as period costs.