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QUESTION 55

PQR Ltd. has furnished the following data for the two years:

	2021	2022
Sales	Rs. 8,00,000	?
Profit/Volume Ratio (P/V ratio)	50%	37.5%
Margin of Safety sales as a % of total sales	40%	21.875%

There has been substantial savings in the fixed cost in the year 2020 due to the restructuring process. The company could maintain its sales quantity level of 2019 in 2020 by reducing selling price.

You are required to CALCULATE the following:

- (i) Sales for 2020 in Value,
- (ii) Fixed cost for 2020 in Value,
- (iii) Break-even sales for 2020 in Value.

SOLUTION

- In 2019, PV ratio = 50%
- Variable cost ratio = 100% - 50% = 50%
- Variable cost in 2019 = Rs.8,00,000 × 50% = Rs.4,00,000
- In 2020, sales quantity has not changed. Thus, variable cost in 2020 is Rs.4,00,000.
- In 2020, P/V ratio = 37.50%
- Thus, Variable cost ratio = 100% - 37.5% = 62.5%
- (i) Thus, sales in 2020 = $\frac{4,00,000}{62.5\%} = \text{Rs.}6,40,000$
- In 2020, Break-even sales = 100% - 21.875% (Margin of safety) = 78.125%
- (ii) Break-even sales = 6,40,000 × 78.125% = Rs.5,00,000
- (iii) Fixed cost = B.E. sales × P/V ratio
= 5,00,000 × 37.50% = Rs.1,87,500.

QUESTION 56 (Similar to RTP May 20)

Arnav Ltd. manufacture and sales its product R-9. The following figures have been collected from cost records of last year for the product R-9:

<i>Elements of Cost</i>	<i>Variable Cost portion</i>	<i>Fixed Cost</i>
<i>Direct Material</i>	<i>30% of Cost of Goods Sold</i>	<i>--</i>
<i>Direct Labour</i>	<i>15% of Cost of Goods Sold</i>	<i>--</i>
<i>Factory Overhead</i>	<i>10% of Cost of Goods Sold</i>	<i>Rs. 2,30,000</i>
<i>General & Administration Overhead</i>	<i>2% of Cost of Goods Sold</i>	<i>Rs. 71,000</i>
<i>Selling & Distribution Overhead</i>	<i>4% of Cost of Sales</i>	<i>Rs. 68,000</i>

Last Year 5,000 units were sold at Rs. 185 per unit. From the given data find the followings:

- (a) Break-even Sales(in rupees).
- (b) Profit earned during last year.
- © Margin of safety (in %).
- (d) Profit if the sales were 10% less than the actual sales.

SOLUTION

Working Notes:

(i) Calculation of Cost of Goods Sold (COGS):

$$COGS = \{(DM- 0.3 COGS) + (DL- 0.15 COGS) + (FOH- 0.10 COGS + Rs. 2,30,000) + (G\&AOH- 0.02 COGS + Rs. 71,000)\}$$

Or $COGS = 0.57 COGS + Rs. 3,01,000$

Or $COGS = \frac{Rs. 3,01,000}{0.43} = Rs. 7,00,000$

QUESTION 57

A single product company sells its product at Rs.60 per unit. In 2021, the company operated at a margin of safety of 40%. The fixed costs amounted to Rs.3,60,000 and the variable cost ratio to sales was 80%.

In 2022, it is estimated that the variable cost will go up by 10% and the fixed cost will increase by 5%.

- (i) FIND the selling price required to be fixed in 2022 to earn the same P/V ratio as in 2021.
- (ii) Assuming the same selling price of Rs.60 per unit in 2022, Find the number of units required to be produced and sold to earn the same profit as in 2021.

SOLUTION

(I) Profit earned in 2021

Particulars	(Rs.)
Total contribution (50,000 x Rs.12)	6,00,000
Less: Fixed cost	<u>3,60,000</u>
Profit	<u>2,40,000</u>
Selling price to be fixed in 2022:	
Revised variable cost (Rs.48 x 1.10)	52.80
Revised fixed cost (3,60,000 x 1.05)	3,78,000
P/V Ratio (Same as of 2021)	20%
Variable cost ratio to selling price	80%

Therefore, revised selling price per unit = Rs. 52.80 / 80% = Rs.66

(ii) No. of units to be produced and sold in 2022 to earn the same profit:

We know that Fixed Cost plus profit =	Contribution (Rs.)
Profit in 2021	2,40,000
Fixed cost in 2022	<u>3,78,000</u>
Desired contribution in 2022	<u>6,18,000</u>

Contribution per unit = Selling price per unit - Variable cost per unit.
= Rs.60 - Rs.52.80 = Rs.7.20.

No. of units to be produced in 2022 = Rs. 6,18,000 / Rs.7.20 = 85,834 units.

Working notes:

1. PV Ratio in 2021

	(Rs.)
Selling price per unit	60
Variable cost (80% of Selling Price)	<u>48</u>
Contribution	<u>12</u>
P/V Ratio	20%

2. No. of units sold in 2021

Break-even point = Fixed cost / Contribution per unit
 = Rs.3,60,000 / Rs.12 = 30,000 units.

Margin of safety is 40%. Therefore, break-even sales will be 60% of units sold.

No. of units sold = Break-even point in units / 60%
 = 30,000 / 60% = 50,000 units.

QUESTION 58

Wonder Ltd. manufactures a single product, ZEST. The following figures relate to ZEST for a one-year period:

Activity Level	50%	100%
Sales and production (units)	400	800
	(Rs.)	(Rs.)
Sales	8,00,000	16,00,000
Production costs:		
- Variable	3,20,000	6,40,000
- Fixed	1,60,000	1,60,000
Selling and distribution costs:		
- Variable	1,60,000	3,20,000
- Fixed	2,40,000	2,40,000

The normal level of activity for the year is 800 units. Fixed costs are incurred evenly throughout the year, and actual fixed costs are the same as budgeted. There were no stocks of ZEST at the beginning of the year.

In the first quarter, 220 units were produced and 160 units were sold.

Required:

- i) Compute the fixed production costs absorbed by ZEST if absorption costing is used?
- ii) Calculate the under/over-recovery of overheads during the period?
- iii) Calculate the profit using absorption costing?
- iv) Calculate the profit using marginal costing?

SOLUTION

(i) Fixed production costs absorbed:	(Rs.)
Budgeted fixed production costs	1,60,000
Budgeted output (normal level of activity 800 units)	
Therefore, the absorption rate: $1,60,000/800 =$	Rs.200 per unit
During the first quarter, the fixed production cost absorbed by ZEST would be $(220 \text{ units} \times \text{Rs. } 200)$	44,000

(ii) Under /over-recovery of overheads during the period:	(Rs.)
Actual fixed production overhead (1/4 of Rs.1,60,000)	40,000
Absorbed fixed production overhead	44,000
Over-recovery of overheads	4,000

(iii) Profit for the Quarter (Absorption Costing)

	(Rs.)	(Rs.)
Sales revenue (160 units × Rs.2,000): (A)		3,20,000
Less: Production costs:		
- Variable cost (220 units × Rs.800)	1,76,000	
- Fixed overheads absorbed (220 units × Rs. 200)	44,000	2,20,000
Add: Opening stock		--
Less: Closing Stock $\left[\frac{\text{Rs.2,20,000}}{220\text{units}} \times 60\text{units} \right]$		(60,000)
Cost of Goods sold		1,60,000
Less: Adjustment for over-absorption of fixed production overheads		(4,000)
Add: Selling & Distribution Overheads:		
- Variable (160 units × Rs.400)	64,000	
- Fixed (1/4 th of Rs.2,40,000)	60,000	1,24,000
Cost of Sales (B)		2,80,000
Profit {(A) - (B)}		40,000

Student Notes

(iv) Profit for the Quarter (Marginal Costing)

	(Rs.)	(Rs.)
Sales revenue (160 units × Rs.2,000): (A)		3,20,000
Less: Production costs:		
- Variable cost (220 units × Rs.800)		1,76,000
Add: Opening stock		--
Less: Closing Stock $\left[\frac{\text{Rs.1,76,000}}{220\text{units}} \times 60\text{units} \right]$		(48,000)
Variable cost of goods sold		1,28,000
Add: Selling & Distribution Overheads:		
- Variable (160 units × Rs.400)		64,000
Cost of Sales (B)		1,92,000
Contribution {(C) = (A) - (B)}		1,28,000
Less: Fixed Costs:		
- Production cost	(40,000)	
- Selling & distribution cost	(60,000)	(1,00,000)
Profit		28,000

Student Notes

QUESTION 59

A company can make any one of the 3 products X, Y or Z in a year. It can exercise its option only at the beginning of each year.

Relevant information about the products for the next year is given below.

	X	Y	Z
Selling Price (Rs./ unit)	10	12	12
Variable Costs (Rs./ unit)	6	9	7
Market Demand (unit)	3,000	2,000	1,000
Production Capacity (unit)	2,000	3,000	900
Fixed Costs (Rs.)	30,000		

Required

Compute the opportunity costs for each of the products.

SOLUTION

	X	Y	Z
I. Contribution per unit (Rs.)	4	3	5
II. Units (Lower of Production / Market Demand)	2,000	2,000	900
III. Possible Contribution (Rs.) [I × II]	8,000	6,000	4,500
IV. Opportunity Cost* (Rs.)	6,000	8,000	8,000

(* Opportunity cost is the maximum possible contribution forgone by not producing alternative product i.e. if Product X is produced then opportunity cost will be maximum of (Rs. 6,000 from Y, Rs.4,500 from Z).

QUESTION 60

The following are cost data for three alternative ways of processing the clerical work for cases brought before the LC Court System:

	A Manual (Rs.)	B Semi- Automatic (Rs.)	C Fully- Automatic (Rs.)
Monthly fixed costs:			
Occupancy	15,000	15,000	15,000
Maintenance contract	---	5,000	10,000
Equipment lease	---	25,000	1,00,000
Unit variable costs (per report):			
Supplies	40	80	20
Labour	Rs.200 (5 hrs × Rs.40)	Rs.60 (1 hr × Rs.60)	Rs.20 (0.25 hr × Rs.80)

Required:

- CALCULATE cost indifference points. Interpret your results.
- If the present case load is 600 cases and it is expected to go up to 850 cases in near future, SELECT most appropriate on cost considerations.

SOLUTION

(i) Cost Indifference Point

	A and B (Rs.)	A and C (Rs.)	B and C (Rs.)
Differential Fixed Cost (I)	Rs.30,000 (Rs.45,000 - Rs.15,000)	Rs.1,10,000 (Rs.1,25,000 - Rs.15,000)	Rs.80,000 (Rs.1,25,000 - Rs.45,000)
Differential Variable Costs (II)	Rs.100 (Rs.240 -Rs.140)	Rs.200 (Rs.240 - Rs.40)	Rs.100 (Rs.140 - Rs.40)
Cost Indifference Point (I/II) (Differential Fixed Cost / Differential Variable Costs per case)	300 Cases	550 Cases	800 Cases

Interpretation of Results

(i) At activity level below the indifference points, the alternative with lower fixed costs and higher variable costs should be used. At activity level above the indifference point alternative with higher fixed costs and lower variable costs should be used.

No. of Cases	Alternative to be Chosen
Cases \leq 300	Alternative 'A'
300 \geq Cases \leq 800	Alternative 'B'
Cases \geq 800	Alternative 'C'

(ii) Present case load is 600. Therefore, alternative B is suitable. As the number of cases is expected to go upto 850 cases, alternative C is most appropriate.

(ii) Calculation of Cost of Sales (COS):

$$COS = COGS + (S\&DOH - 0.04 COS + Rs. 68,000)$$

Or

$$COS = Rs. 7,00,000 + (0.04 COS + Rs. 68,000)$$

Or

$$COS = \frac{Rs. 7,68,000}{0.96} = Rs. 8,00,000$$

(iii) Calculation of Variable Costs:

Direct Material-	(0.3 × Rs. 7,00,000)	Rs. 2,10,000
Direct Labour-	(0.15 × Rs. 7,00,000)	Rs. 1,05,000
Factory Overhead -	(0.10 × Rs. 7,00,000)	Rs. 70,000
General & Administration OH-	(0.02 × Rs. 7,00,000)	Rs. 14,000
Selling & Distribution OH -	(0.04 × Rs. 8,00,000)	<u>Rs. 32,000</u>
		<u>Rs. 4,31,000</u>

(iv) Calculation of total Fixed Costs:

Factory Overhead-	Rs. 2,30,000
General & Administration OH-	Rs. 71,000
Selling & Distribution OH	Rs. 68,000
	<u>Rs. 3,69,000</u>

(v) Calculation of P/V Ratio:

$$P/V \text{ Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}} \times 100$$

$$= \frac{(Rs. 185 \times 5,000 \text{ units}) - Rs. 4,31,000}{Rs. 185 \times 5,000 \text{ units}} \times 100 = 53.41\%$$

(a) Break- Even Sales = $\frac{\text{Fixed Cost}}{P/V \text{ Ratio}} = \frac{Rs. 3,69,000}{53.41\%} = Rs. 6,90,882$

(b) Profit earned during the last year

$$= (\text{Sales} - \text{Total Variable Costs}) - \text{Total Fixed Costs}$$

$$= (Rs. 9,25,000 - Rs. 4,31,000) - Rs. 3,69,000$$

$$= Rs. 1,25,000$$

$$\begin{aligned} \text{(c) Margin of Safety (\%)} &= \frac{\text{Sales} - \text{Break even sales}}{\text{Sales}} \times 100 \\ &= \frac{\text{Rs. } 9,25,000 - \text{Rs. } 6,90,000}{\text{Rs. } 9,25,000} \times 100 = 25.31\% \end{aligned}$$

(d) Profit if the sales were 10% less than the actual sales:

$$\begin{aligned} \text{Profit} &= 90\% (\text{Rs. } 9,25,000 - \text{Rs. } 4,31,000) - \text{Rs. } 3,69,000 \\ &= \text{Rs. } 4,44,600 - \text{Rs. } 3,69,000 = \text{Rs. } 75,600 \end{aligned}$$

QUESTION 61

X Ltd. supplies spare parts to an air craft company Y Ltd. The production capacity of X Ltd. facilitates production of any one spare part for a particular period of time. The following are the cost and other information for the production of the two different spare parts A and B:

	Part A	Part B
Per unit		
Alloy usage	1.6 kgs.	1.6 kgs.
Machine Time: Machine P	0.6 hrs	0.25 hrs.
Machine Time: Machine Q	0.5 hrs.	0.55 hrs.
Target Price (Rs.)	145	115
Total hours available	Machine P 4,000	Machine Q 4,500 hours
Alloy available is 13,000 kgs. @ Rs.12.50 per kg.		
Variable overheads per machine hours	Machine P: Rs.80	Machine Q: Rs.100

Required

- i) IDENTIFY the spare part which will optimize contribution at the offered price.
- ii) If Y Ltd. reduces target price by 10% and offers Rs.60 per hour of unutilized machine hour, CALCULATE the total contribution from the spare part identified above?

SOLUTION

(i)

	Part A	Part B
Machine "P" (4,000 hrs)	6,666	16,000
Machine "Q" (4,500 hrs)	9,000	8,181
Alloy Available (13,000 kg.)	8,125	8,125
Maximum Number of Parts to be manufactured (Minimum of the above three)	6,666	8,125

	(Rs.)	(Rs.)
Material (Rs.12.5 × 1.6 kg.)	20.00	20.00
Variable Overhead: Machine "P"	48.00	20.00
Variable Overhead: Machine "Q"	50.00	55.00
Total Variable Cost per unit	118.00	95.00
Price Offered	145.00	115.00
Contribution per unit	27.00	20.00
Total Contribution for units produced ... (I)	1,79,982	1,62,500

(ii) Spare Part A will optimize the contribution.

	Part A
Parts to be manufactured numbers	6,666
Machine P : to be used	4,000
Machine Q : to be used	3,333
Underutilized Machine Hours (4,500 hrs. - 3,333 hrs.)	1,167
Compensation for unutilized machine hours (1,167hrs. × Rs.60) (II)	70,020
Reduction in Price by 10%, Causing fall in Contribution of Rs.14.50 per unit (6,666 units × Rs.14.5) (III)	96,657
Total Contribution (I + II - III)	1,53,345

Q.	Concept	Pg
62	Production / RM Consumption/ Purchase Budget	160-162
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64	Flexible Budget	167-168

QUESTION 62 (Similar to RTP May 19)

ABC Ltd. is currently operating at 75% of its capacity. In the past two years, the levels of operations were 55% and 65% respectively. Presently, the production is 75,000 units. The company is planning for 85% capacity level during 2020-21. The cost details are as follows:

	55% (Rs.)	65% (Rs.)	75% (Rs.)
Direct Materials	11,00,000	13,00,000	15,00,000
Direct Labour	5,50,000	6,50,000	7,50,000
Factory Overheads	3,10,000	3,30,000	3,50,000
Selling Overheads	3,20,000	3,60,000	4,00,000
Administrative Overheads	<u>1,60,000</u>	<u>1,60,000</u>	<u>1,60,000</u>
	<u>24,40,000</u>	<u>28,00,000</u>	<u>31,60,000</u>

Profit is estimated @ 20% on sales.

The following increases in costs are expected during the year:

	In percentage
Direct Materials	8
Direct Labour	5
Variable Factory Overheads	5
Variable Selling Overheads	8
Fixed Factory Overheads	10
Fixed Selling Overheads	15
Administrative Overheads	10

Prepare flexible budget for the period 2020-21 at 85% level of capacity. Also ascertain profit and contribution.

SOLUTION

ABC Ltd.

Budget for 85% capacity level for the period 2020-21

Budgeted production (units)	85,000	
	Per Unit (Rs.)	Amount (Rs.)
Direct Material (note 1)	21.60	18,36,000
Direct Labour (note 2)	10.50	8,92,500
Variable factory overhead (note 3)	2.10	1,78,500
Variable selling overhead (note 4)	4.32	3,67,200
Variable cost	38.52	32,74,200
Fixed factory overhead (note 3)		2,20,000

Fixed selling overhead (note 4)		1,15,000
Administrative overhead		1,76,000
Fixed cost		5,11,000
Total cost		37,85,200
Add: Profit 20% on sales or 25% on total cost		9,46,300
Sales		47,31,500
Contribution (Sales - Variable cost)		14,57,300

Working Notes:

1. Direct Materials:

	(Rs.)		(Rs.)
75% Capacity	15,00,000	65% Capacity	13,00,000
65% Capacity	13,00,000	55% Capacity	11,00,000
10% change in capacity	2,00,000	10% change in capacity	2,00,000

For 10% increase in capacity, i.e., for increase by 10,000 units, the total direct material cost regularly changes by Rs. 2,00,000

Direct material cost (variable) = Rs. 2,00,000/10,000 = Rs. 20

After 8% increase in price, direct material cost per unit
= Rs. 20 × 1.08 = Rs. 21.60

Direct material cost for 85,000 budgeted units
= 85,000 × Rs. 21.60 = Rs. 18,36,000

2. Direct Labour:

	(Rs.)		(Rs.)
75% Capacity	7,50,000	65% Capacity	6,50,000
65% Capacity	6,50,000	55% Capacity	5,50,000
10% change in capacity	1,00,000	10% change in capacity	1,00,000

For 10% increase in capacity, direct labour cost regularly changes by Rs. 1,00,000.

Direct labour cost per unit = Rs. 1,00,000 ÷ 10,000 = Rs. 10

After 5% increase in price, direct labour cost per unit
= Rs. 10 × 1.05 = Rs. 10.50

Direct labour for 85,000 units = 85,000 units × Rs. 10.50
= Rs. 8,92,500.

3. Factory overheads are semi-variable overheads:

	(Rs.)		(Rs.)
75% Capacity	3,50,000	65% Capacity	3,30,000
65% Capacity	3,30,000	55% Capacity	3,10,000
10% change in capacity	20,000	10% change in capacity	20,000

Variable factory overhead = Rs. 20,000 / 10,000 = Rs. 2

Variable factory overhead for 75,000 units = 75,000 × Rs. 2 = Rs. 1,50,000

Fixed factory overhead = Rs. 3,50,000 - Rs. 1,50,000 = Rs. 2,00,000.

Variable factory overhead after 5% increase = Rs. 2 × 1.05 = Rs. 2.10

Fixed factory overhead after 10% increase = Rs. 2,00,000 × 1.10
= Rs. 2,20,000.

4. Selling overhead is semi-variable overhead:

	(Rs.)		(Rs.)
75% Capacity	4,00,000	65% Capacity	3,60,000
65% Capacity	3,60,000	55% Capacity	3,20,000
10% change in capacity	40,000	10% change in capacity	40,000

Variable selling overhead = Rs. 40,000 / 10,000 units = Rs. 4

Variable selling overhead for 75,000 units = 75,000 × Rs. 4 = Rs. 3,00,000.

Fixed selling overhead = Rs. 4,00,000 - Rs. 3,00,000 = Rs. 1,00,000

Variable selling overhead after 8% increase = Rs. 4 × 1.08 = Rs. 4.32

Fixed selling overhead after 15% increase = Rs. 1,00,000 × 1.15
= Rs. 1,15,000

5. Administrative overhead is fixed:

After 10% increase = Rs. 1,60,000 × 1.10 = Rs. 1,76,000

QUESTION 63

A single product company estimated its quarter-wise sales for the next year as under:

Quarter	Sales (Units)
I	30,000
II	37,500
III	41,250
IV	45,000

The opening stock of finished goods is 6,000 units and the company expects to maintain the closing stock of finished goods at 12,250 units at the end of the year. The production pattern in each quarter is based on 80% of the sales of the current quarter and 20% of the sales of the next quarter. The company maintains this 20% of sales of next quarter as closing stock of current quarter.

The opening stock of raw materials in the beginning of the year is 10,000 kg. and the closing stock at the end of the year is required to be maintained at 5,000 kg. Each unit of finished output requires 2 kg. of raw materials.

The company proposes to purchase the entire annual requirement of raw materials in the first three quarters in the proportion and at the prices given below:

Quarter	Purchase of raw materials % to total annual requirement in quantity	Price per kg. (Rs.)
I	30%	2
II	50%	3
III	20%	4

The value of the opening stock of raw materials in the beginning of the year is Rs. 20,000. You are required to PREPARE the following for the next year, quarter wise:

- Production budget (in units).
- Raw material consumption budget (in quantity).
- Raw material purchase budget (in quantity and value).
- Priced stores ledger card of the raw material using First in First out method.

SOLUTION

Working Note:

Calculation of total annual production

	(Units)
Sales in 4 quarters	1,53,750
Add: Closing balance	12,250
	1,66,000
Less: Opening balance	(6,000)
Total number of units to be produced in the next year	1,60,000

(i) Production Budget (in units)

Quarters	I Units	II Units	III Units	IV Units	Total Units
Sales	30,000	37,500	41,250	45,000	1,53,750
Production in current quarter (80% of the sale of current quarter)	24,000	30,000	33,000	36,000	
Production for next quarter (20% of the sale of next quarter)	7,500	8,250	9,000	12,250	
Total production	31,500	38,250	42,000	48,250	1,60,000

(ii) Raw material consumption budget in quantity

Quarters	I	II	III	IV	Total
Units to be produced in each quarter: (A)	31,500	38,250	42,000	48,250	1,60,000
Raw material consumption p.u. (kg.): (B)	2	2	2	2	
Total raw material consumption (Kg.) : (A × B)	63,000	76,500	84,000	96,500	3,20,000

(iii) Raw material purchase budget (in quantity)

	Qty. (kg.)
Raw material required for production	3,20,000
Add : Closing balance of raw material	5,000
	3,25,000
Less : Opening balance	(10,000)
Material to be purchased	3,15,000

Raw material purchase budget (in value)

Quarters	% of annual requirement	Qty. of material	Rate per kg. (Rs.)	Amount (Rs.)
(1)	(2)	(3)	(4)	(5)=(3×4)
I	30	94,500 (3,15,000 kg. × 30%)	2	1,89,000
II	50	1,57,500 (3,15,000 kg. × 50%)	3	4,72,500
III	20	63,000 (3,15,000 kg. × 20%)	4	2,52,000
Total		3,15,000		9,13,500

(iv) Priced Stores Ledger Card

(of the raw material using FIFO method)

	Quarters											
	I			II			III			IV		
	Kg.	Rate	Value	Kg.	Rate	Value	Kg.	Rate	Value	Kg.	Rate	Value
	(Rs.)	(Rs.)		(Rs.)	(Rs.)		(Rs.)	(Rs.)		(Rs.)	(Rs.)	
Opening balance	10,000	2	20,000	41,500	2	83,000	1,22,500	3	3,67,500	38,500	3	1,15,500
(A)										63,000	4	2,52,000
Purchases: (B)	94,500	2	1,89,000	1,57,500	3	4,72,500	63,000	4	2,52,000	-	-	-
Consumption: (C)	63,000	2	1,26,000	41,500	2	83,000	84,000	3	2,52,000	38,500	3	1,15,500
				35,000	3	1,05,000				58,000	4	2,32,000
Balance: (D)	41,500	2	83,000	1,22,500	3	3,67,500	38,500	3	1,15,500	5,000	4	20,000
(D) = (A)+(B)-(C)							63,000	4	2,52,000			

QUESTION 64 (Similar to Past Paper May 19)

Following data is available for DKG and Co:

Standard working hours	8 hours per day of 5 days per week
Maximum capacity	50 employees
Actual working	40 employees
Actual hours expected to be worked per four week	6,400 hours
Std. hours expected to be earned per four weeks	8,000 hours
Actual hours worked in the four- week period	6,000 hours
Standard hours earned in the four- week period	7,000 hours.

The related period is of 4 weeks. In this period there was a one special day holiday due to national event. CALCULATE the following ratios:

(1) Efficiency Ratio, (2) Activity Ratio, (3) Calendar Ratio, (4) Standard Capacity Usage Ratio, (5) Actual Capacity Usage Ratio, (6) Actual Usage of Budgeted Capacity Ratio.

SOLUTION

Maximum Capacity in a budget period

$$= 50 \text{ Employees} \times 8 \text{ Hrs.} \times 5 \text{ Days} \times 4 \text{ Weeks} = 8,000 \text{ Hrs.}$$

Budgeted Hours

$$40 \text{ Employees} \times 8 \text{ Hrs.} \times 5 \text{ Days} \times 4 \text{ Weeks} = 6,400 \text{ Hrs.}$$

Actual Hrs. = 6,000 Hrs. (given)

Standard Hrs. for Actual Output = 7,000 Hrs.

Budgeted No. of Days = 20 Days (4 Weeks \times 5 Days)

Actual No. of Days = 20 - 1 = 19 Days

$$1. \text{ Efficiency Ratio} = \frac{\text{Standard Hrs.} \times 100}{\text{Actual Hrs.}}$$

$$= \frac{7,000 \text{ hours} \times 100}{6,000} = 116.67\%$$

$$2. \text{ Activity Ratio} = \frac{\text{Standard Hrs} \times 100}{\text{Budgeted Hrs.}}$$

$$= \frac{7,000 \text{ hours} \times 100}{6,400 \text{ hours}} = 109.375\%$$

$$\begin{aligned}
 3. \text{ Calendar Ratio} &= \frac{\text{Available working days} \times 100}{\text{Budgeted Working Days}} \\
 &= \frac{19 \text{ days} \times 100}{20 \text{ days}} = 95\%
 \end{aligned}$$

$$\begin{aligned}
 4. \text{ Standard Capacity Usage Ratio} \\
 &= \frac{\text{Budgeted Hours} \times 100}{\text{Max. possible working hours in a period}} \\
 &= \frac{6,400 \text{ hours} \times 100}{8,000 \text{ hours}} = 80\%
 \end{aligned}$$

$$\begin{aligned}
 5. \text{ Actual Capacity usage Ratio} \\
 &= \frac{\text{Actual Hours worked} \times 100}{\text{Max. possible working hours in a year}} \\
 &= \frac{6,000 \text{ hours} \times 100}{8,000 \text{ hours}} = 75\%
 \end{aligned}$$

$$\begin{aligned}
 6. \text{ Actual usage of Budgeted Capacity Ratio} \\
 &= \frac{\text{Actual working Hours} \times 100}{\text{Budgeted hours}} \\
 &= \frac{6,000 \text{ hours} \times 100}{6,400 \text{ hours}} = 93.75\%
 \end{aligned}$$

Student Notes