# J.K. SHAH®
## TEST SERIES
### Evaluate Learn Succeed

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## SUGGESTED SOLUTION

## IPCC NOVEMBER 2016 EXAM

### COSTING

## Test Code - I N J1 1 5 0

**BRANCH – (MUMBAI) (Date :04.09.2016)**

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**Answer-1 (a) :**
**Table showing Labour Cost per Article**

| Method of Payment | Hours Worked | Weekly earnings (Rs.) | Number of articles produced | Labour cost per article (Rs.) |
|---|---|---|---|---|
| Existing time rate (WN-1) | 49 | 8,425.00 | 120 | 70.21 |
| Straight piece rate system (WN-2) | 40 | 8,640.00 | 135 | 64.00 |
| Rowan Premium System (WN-3) | 40 | 9,007.41 | 135 | 66.72 |
| Halsey Premium System (WN-4) | 40 | 8,600.00 | 135 | 63.70 |

**(4 Marks)**

**Working Notes:**

**1.    Existing time rate**

Weekly wages:

| | | |
|---|---|---|
| Normal shift | (40 hours × Rs. 160) | Rs. 6,400 |
| Late shift | (9 hours × Rs. 225) | Rs. 2,025 |
| | | Rs. 8,425 |

**(1 Mark)**

**2.    Piece Rate System**

15 articles are produced in 5 hours

Therefore, to produce 135 articles, hours required is $\dfrac{5 \text{ hours}}{15 \text{ articles}} \times 135\text{articles} = 45$ hours.

Cost of producing 135 articles:

| | |
|---|---|
| At basic time rate (45 hours × Rs.160) = | Rs. 7,200 |

Add: Bonus @ 20% on basic Piece rate

$$\left(\frac{Rs.7,200}{135 \text{ aricles}} \times 20\% \times 135 \text{ articles}\right) = \qquad Rs. 1,440$$

Earning for the week          Rs. 8,640

**(1 Mark)**

**3.    Rowan Premium System**

(i)    Time allowed for producing 135 articles $\left(\dfrac{5 \text{ hours}}{15 \text{ articles}} \times 135 \text{ articles} \times 150\%\right) =$  67.5 hours

(ii)   Time taken to produce 135 articles =                          40 hours
(iii)  Time Saved =                                                      27.5 hours

Earnings under Rowan Premium system:

$$= (\text{Time taken} \times \text{Rate per hour}) + \left(\frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time taken} \times \text{Rate per hour}\right)$$

$$= (40 \text{hours} \times 160) + \left(\frac{27.5 \text{ hours}}{67.5 \text{ hours}} \times 40 \text{ hours} \times Rs.160\right) = Rs.9,007.41$$

**(1 Mark)**

**4.    Halsey Premium System**

$$= (\text{Time taken} \times \text{Rate per hour}) + (\tfrac{1}{2} \times \text{Time saved} \times \text{Rate per hour})$$

$$= (40 \text{hours} \times 160) + (\tfrac{1}{2} \times 27.5 \text{hours} \times 160) = Rs.6,400 + Rs.2,200 = Rs.8,600$$

**(1 Mark)**

**Answer-1 (b) :**

| Fixed expenses per month | (Rs.) |
|---|---|
| Rent (one fourth of the total) | 75.00 |
| Lighting (one fifth of the total) | 16.00 |
| Foreman's salary (one sixth of the total) | 160.00 |
| Sundry expenses–oil, waste etc. | 9.00 |
| Insurance (1% on the value of the machine per year) | 8.33 |
| Total constant expenses per month | 268.33 |

| | | (Rs.) | (Rs.) |
|---|---|---|---|
| Total number of hours per annum | | | 4,380 |
| Total number of hours per month | | | 365 |

**(3 Marks)**

| | | (Rs.) | (Rs.) |
|---|---|---|---|
| Fixed expenses per hour : $\dfrac{\text{Rs.268.33}}{365 \text{ hours}}$ | | | 0.735 |
| Variable expenses per hour : | | | |
| Depreciation : | | | |
| Cost of the machine | | 10,000 | |
| Less: Scrap value | | 900 | |
| | | 9,100 | |
| Depreciation per annum | | 910 | |
| Depreciation per hour: $\dfrac{910}{4,380 \text{ hours}}$ | | | 0.208 |
| Repairs for the whole life | | 18,000 | |
| for one hour $\dfrac{\text{Rs.18,000}}{4,380 \times 10 \text{ years}}$ | | | 0.411 |
| Electricity for one hour : 15 units @ 0.05 P | | | 0.750 |
| Machine hour rate : | | | 2.104 |

**(4 Marks)**

**Answer-2 :**

(i) 

Total Fixed Cost = Rs.6,00,000 + Rs.20,00,000 + Rs.8,00,000 + Rs.2,00,000
= Rs.36,00,000

Contribution per unit = Rs.600 - Rs.470 = Rs.130

P/V Ratio $= \dfrac{\text{Contribution per unit}}{\text{Selling Price}} \times 100 = \dfrac{\text{Rs.130}}{\text{Rs.600}} \times 100 = 21.67\%$

Break-even Point $= \dfrac{\text{Total Fixed Cost}}{\text{Contribution per unit}} \times 100$

$= \dfrac{\text{Rs.36,00,000}}{\text{Rs.130}} = 27,692.31 \text{ or } 27,693 \text{ units}$

Break-even Sales $= \dfrac{\text{Total Fixed Cost}}{\text{P/V Ratio}} = \dfrac{\text{Rs.36,00,000}}{21.67\%} = \text{Rs.1,66,12,829}$

**Calculation of Profit/ (loss):**

Total Contribution (Rs.130 × 35,000 units) = Rs.45,50,000

Less: Fixed Cost = Rs.36,00,000

Profit = Rs. 9,50,000

**(3 Marks)**

(ii) 

Revised Selling Price = Rs.600 – 5% of Rs.600 = Rs.570

Revised Variable cost = Rs.410

Revised Contribution = Rs.570 – Rs.410 = Rs.160

Break-even Point $= \dfrac{\text{Rs.36,00,000 + Rs.9,00,000}}{\text{Rs.160}} = 28,125 \text{ units}$

**(2 Marks)**

(iii) 

Revised Selling Price = Rs.600 + 5% of Rs.600 = Rs.630

Revised Variable cost = Rs.470 + Rs.5 = Rs.475

Revised Contribution = Rs.630 – Rs.475 = Rs.155

Break-even Point $= \dfrac{\text{Rs.36,00,000}}{\text{Rs.155}} = 23,225.81 \text{ or } 23,226 \text{ units}$

**(2 Marks)**

**Answer-3 :**
**Workings:**

1. Calculation of Actual Materials Consumed:

| Particulars | Material A (kg.) | Material B (kg.) |
|---|---|---|
| Opening stock | 40 | 50 |

| | | |
|---|---|---|
| Add: Purchases | 900 | 1,400 |
| Less: Closing Stock | (10) | (60) |
| Material Consumed | 930 | 1,390 |

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**(2 Marks)**

(i)  Material Price Variance:
   Actual Quantity (Std. Price – Actual Price) = AQ × SP – AQ × AP
   Material A = (930 kg × Rs.40) - {(40 kg × Rs.40) + (890 kg × Rs.42.50)}
            = Rs.37,200 – (Rs.1,600 + Rs.37,825) = Rs.2,225 (A)
   Material B = (1,390 kg × Rs.30) - {(50 kg × Rs.30) + (1,340 kg × Rs.25)}
            = Rs.41,700 – (Rs.1,500 + Rs.33,500) = Rs.6,700 (F)

**(1 Mark)**

(ii)  Material Usage Variance = Std. Price (Std. Quantity - Actual Quantity)

   Material A $= Rs.40 \left\{ \left( \dfrac{40\% \text{ of } 2,000}{0.85} \right) - 930 \text{ kg} \right\}$

          = Rs.40 (941.18 kg. – 930 kg) = Rs.447 (F)

   Material B $= Rs.30 \left\{ \left( \dfrac{60\% \text{ of } 2,000}{0.85} \right) - 1,390 \text{ kg} \right\}$

          = Rs.30 (1,411.76 kg. – 1,390 kg) = Rs.653 (F)

**(2 Marks)**

(iii)  Material Mix Variance = Std. Price (Revised Std. Quantity – Actual Quantity)
   Material A = Rs.40 {(40% of 2,320) - 930 kg} = Rs.80 (A)
   Material B = Rs.30 { (60% of 2,320) - 1,390 kg} = Rs.60 (F)

**(1 Mark)**

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

   Material A $= Rs.40 \left\{ \left( \dfrac{40\% \text{ of } 2,000}{0.85} \right) - \left( 40\% \text{ of } 2,320 \right) \right\}$

          = Rs.40 { 941.18 kg. – 928 kg.} = 527 (F)

   Material B $= Rs.30 \left\{ \left( \dfrac{60\% \text{ of } 2,000}{0.85} \right) - \left( 60\% \text{ of } 2,320 \right) \right\}$

          = Rs.30 {1,411.76 kg. – 1,392 kg.} = 593 (F)

**(2 Marks)**

(v)  Total Material Cost Variance = Std. Price × Std Qty. – Actual Price × Actual Qty.

   Material A $= \left[ \left\{ Rs.40 \times \left( \dfrac{40\% \text{ of } 2,000}{0.85} \right) \right\} - \left\{ \left( 40 \text{ kg} \times Rs.40 \right) + \left( 890 \text{ kg} \times Rs.42.50 \right) \right\} \right]$

          = {Rs.40 × 941.18 kg.} – {Rs.1,600 + Rs.37,825}
          = Rs.37,647 – Rs.39,425 = Rs.1,778 (A)

   Material B $= \left[ \left\{ Rs.30 \times \left( \dfrac{60\% \text{ of } 2,000}{0.85} \right) \right\} - \left\{ \left( 50 \text{ kg} \times Rs.30 \right) + \left( 1,340 \text{ kg} \times Rs.25 \right) \right\} \right]$

          = {Rs.30 × 1,411.76 kg.} – {Rs.1,500 + Rs.33,500}
          = Rs.42,353 – Rs.35,000 = Rs.7,353 (F)

**(2 Marks)**

**Answer-4 :**

**Stores Ledger Control Account**

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| | (Rs.) | | (Rs.) |
|---|---|---|---|
| To Balance c/d | 63,000 | By Work-in-progress | 3,36,000 |
| To General Ledger Adjustment A/c | 3,36,000 | By Overhead A/c | 42,000 |
| To Work-in-progress A/c | 1,68,000 | By Overhead A/c.(Deficiency Assumed | |
| | | asNormal) | 12,600 |
| | | By Balance c/d | 1,76,400 |
| | **5,67,000** | | **5,67,000** |

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## Work-in-Progress Control Account

| | (Rs.) | | (Rs.) |
|---|---|---|---|
| To Balance b/d | 1,26,000 | By Stores LedgerControl A/c. | 1,68,000 |
| To Stores Ledger Control A/c | 3,36,000 | ByCosting Profits &Loss A/c | |
| | | (Finished goods at cost Balancing figure) | 8,40,000 |
| To Wages Control A/c | 1,26,000 | By Balance c/d | 84,000 |
| To Overhead A/c (applied) | 5,04,000 | | |
| | **10,92,000** | | **10,92,000** |

## Costing Profit and Loss Account

| | (Rs.) | | (Rs.) |
|---|---|---|---|
| To Work-in-Progress A/c | 8,40,000 | By General LedgerAdjustment A/c Sales | |
| | | (Rs. 8,40,000 + Rs. 84,000) | 9,24,000 |
| To General LedgerAdjustment A/c (Profit) | 84,000 | | |
| | **9,24,000** | | **9,24,000** |

## Financial Profit and Loss Account

| | | (Rs.) | | | (Rs.) |
|---|---|---|---|---|---|
| To Opening Stock | | | By Sales | | 9,24,000 |
| Stores | 63,000 | | By Income frominvestment | | 21,000 |
| WIP | 1,26,000 | 1,89,000 | | | |
| To Purchases | | 3,36,000 | By Closing Stock | | |
| To Wages | | 1,47,000 | Stores | 1,76,400 | |
| To Overhead | | 5,25,000 | WIP | 84,000 | 2,60,400 |
| To Loss on sale of fixed assets | | 42,000 | By Loss | | 33,600 |
| | | **12,39,000** | | | **12,39,000** |

## Reconciliation Statement

| | | (Rs.) |
|---|---|---|
| Profit as per Cost Account | | 84,000 |
| Add: Income from investment | | 21,000 |
| | | 1,05,000 |
| Less: Under absorption of overhead | 96,600 | |
| Loss on sale of fixed assets | 42,000 | 1,38,600 |
| Loss as per financial account | | 33,600 |

**Note:** Deficiency in stock taking may be treated as abnormal loss and it can be transferred from storesledger Control Account to Costing Profit and Loss Account. Then consequential changes in accountingentries in overheads Control Account has to be done.

**Working Notes:**

**Overheads Control Account**

|  | (Rs.) |  | (Rs.) |
|---|---|---|---|
| To Stores Ledger Control A/c | 42,000 | By Work-in-Progress | 5,04,000 |
| To Stores Ledger Control A/c | 12,600 | By Balanced c/d | 96,600 |
| To Wages Control A/c |  |  |  |
| Indirect Wages |  |  |  |
| (Rs.1,47,000 – Rs.1,26,000) | 21,000 |  |  |
| To General Ledger Adjustment A/c | 5,25,000 |  |  |
|  | **6,00,600** |  | **6,00,600** |

**(2 Marks)**

**Answer-5 :**

As the contract is 80% complete, so 2/3rd of the notional profit on cash basis has been transferred to Profit & Loss A/c in the first year of contract.

$\therefore$ Amount transferred to Profit & Loss A/c $= \dfrac{2}{3} \times$ Notional Profit $\times$ % of cash received

Or, $\qquad$ 6,000 $\qquad = \dfrac{2}{3} \times$ Notional Profit $\times \dfrac{75}{100}$

Or, $\qquad$ Notional Profit $= \dfrac{6{,}000 \times 3 \times 100}{2 \times 75} =$ Rs.12,000

**(3 Marks)**

**Computation of Value of Work Certified**

|  | (Rs.) |
|---|---|
| Cost of work to date | 88,000 |
| Add: Notional profit | 12,000 |
|  | 1,00,000 |
| Less: Cost of work uncertified | 8,000 |
| Value of work certified | 92,000 |

**(4 Marks)**

Computation of Contract price:

Since the Value of Work Certified is 80% of the Contract Price, therefore

Contract Price $= \dfrac{\text{Value of Work Certified}}{80\%}$

$= \dfrac{\text{Rs.92,000}}{80\%}$ Rs.1,15,000 .

**(1 Mark)**