



J.K. SHAH[®]
TEST SERIES
Evaluate Learn Succeed

SUGGESTED SOLUTION
INTERMEDIATE N'18 EXAM
SUBJECT- COSTING
Test Code – CIN 5015
(Date :)

Head Office : Shraddha, 3rd Floor, Near Chinai College, Andheri (E), Mumbai – 69.
Tel : (022) 26836666

ANSWER-1

ANSWER-A

(5 MARKS)

Output by experienced workers in 50,000 hours = $50000/10 = 5000$ units

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

Loss of output = $5,000 - 3,000 = 2,000$ units

Total loss of output = Due to delay recruitment + Due to inexperience
= $10,000 + 2,000 = 12,000$ units

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

Total contribution lost = $\text{Rs.}36 \times 12,000 \text{ units} = \text{Rs.} 4,32,000$

Cost of repairing defective units = $3,000 \text{ units} \times 0.2 \times \text{Rs.} 25 = \text{Rs.} 15,000$

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 2017-18	9,00,000

ANSWER-B

(10 MARKS)

Cost sheet for the year ended 31st March, 2018.

Units produced – 14,000 units

Unit sold – 14,153 units

Particulars	Amount (Rs.)
Raw material purchased	42,25,000
Add : Freight Inward	1,00,000
Add : Opening value of raw material	2,28,000
Less : Closing value of raw materials	(3,05,000)

	42,48,000
Less : Sale of scrap of material	8,000
Material consumed	42,40,000
Direct Wages (12,56,000 + 1,50,000)	14,06,000
Prime Cost	56,46,000
Factory overheads (20% of Rs. Prime Cost)	11,29,200
Add : Opening value of W – I – P	1,92,500
Less : Closing value of W – I – P	(1,40,700)
Factory Cost	68,27,000
Add : Administrative overheads	1,73,000
Cost of Production	70,00,000
Add : Value of opening finished stock	6,08,500
Less : Value of closing finished stock [Rs. 500(70,00,000/14,000) × 1,064] (1,217 + 14,000 – 14,153 = 1,064 units)	(5,32,000)
Cost of Goods Sold	70,76,500
Distribution expenses (Rs. 16 × 14,153 units)	2,26,448
Cost of Sales	73,02,948
Profit (Balancing figure)	14,43,606
Sales (Rs. 618 × 14,153 units)	87,46,554

ANSWER-C

(1*1 = 5 MARKS)

	Sales	Profit
Year 20X3	Rs. 1,20,000	Rs. 8,000
Year 20X4	Rs. 1,40,000	Rs. 13,000
Difference	Rs. 20,000	Rs. 5,000

- (i) P/V Ratio = Difference in profit/ Difference in sales x 100
= 5000/20000 x 100 =25%

Contribution in 20X3 (1,20,000 × 25%)	30,000
Less: Profit	<u>8,000</u>
Fixed Cost*	<u>22,000</u>
*Contribution	= Fixed cost + Profit
Fixed cost	= Contribution - Profit

(ii) Break-even point = Fixed cost/ P/V ratio = 22000/25% = Rs. 88000

(iii) Profit when sales are Rs.1,80,000	(Rs.)
Contribution (Rs.1,80,000 25%)	45,000
Less : Fixed cost	<u>22,000</u>
Profit	<u>23,000</u>

(iv) Sales to earn a profit of Rs.12,000

Fixed cost + desired profit / P/V ratio

$$22000 + 12000 / 25\% = 136000$$

(v) Margin of safety in 20X4 –

$$\begin{aligned} \text{Margin of safety} &= \text{Actual sales} - \text{Break-even sales} \\ &= 1,40,000 - 88,000 = \text{Rs. } 52,000. \end{aligned}$$

ANSWER-2

ANSWER-A

Dr.	Raw Material Control Account		Cr.
	Rs.		Rs.
To Balance b/d	48,836	By WIP Control A/c	17,000
To Nominal Ledger Control A/c	22,422	By Nominal Ledger Control A/c	1,000
		By Nominal Ledger Control A/c	1,300
		By Balance c/d	51,958
	71,258		71,258
To Balance b/d	51,958		

(3 MARKS)

Dr.		Work in Progress Control A/c		Cr.	
	Rs.		Rs.		Rs.
To Balance b/d	14,745	By Finished Stock Control A/c			36,834
To Nominal Ledger Control A/c	11,786	By Nominal Ledger Control A/c			1,800
To Raw Material Control A/c	17,000	By Balance c/d			23,267
To Nominal Ledger Control A/c	18,370				
	61,901				61,901
To Balance b/d	23,267				

(2 MARKS)

Dr.		Finished Stock Account		Cr.	
	Rs.		Rs.		Rs.
To Balance b/d	21,980	By Nominal Ledger Control A/c			42,000
To WIP Control A/c	36,834	By Balance c/d			19,814
To Nominal Ledger Control A/c	3,000				
	61,814				61,814
To Balance b/d	19,814				

(2 MARKS)

Dr.		Nominal Ledger Control Account		Cr.	
	Rs.		Rs.		Rs.
To Raw Material Control A/c	1,000	By Balance b/d			85,561
To Raw Material Control A/c	1,300	By Raw Material Control A/c			22,422
To Finished Stock Control A/c	42,000	By WIP Control A/c			11,786
To WIP Control A/c	1,800	By WIP Control A/c			18,370
To Balance c/d	95,039	By Finished Stock Control A/c			3,000
	1,41,139				1,41,139
		By Balance b/d			95,039

(3 MARKS)

ANSWER-B

Before computing the comprehensive machine hour rate, it is necessary to find out the total machine hours utilized and total wages paid to the operators.

Computation of total machine hours utilized :

Normal available hours p.m. per operator 208 hours

Less: Unutilised hours due to:

Absenteeism 18 hours

Leave 20

Idle time 10 48

Total hours utilized p.m. per operator 160

Total hours utilized for 6 months for 6 operators = $160 \times 6 \times 6$ or 5,760 hrs.

It is given in the question that the machines cannot work without an operator wholly engaged on it. Therefore, hours utilized for 6 operators, i.e., 5,760 hrs. represents the total machine hours. Total wages to 6 operators for 6 months :

Average rate of wages per hour = $\text{Rs. } 20 \div 8 \text{ hrs.} = \text{Rs. } 2.50$

Normal hours for which wages are to be paid = $208 - 18$ or 190 hrs.

Wages for 6 months for 6 operators @ $\text{Rs. } 2.50/\text{hr} = 190 \times 6 \times 6 \times 2.50$ or $\text{Rs. } 17,100$.

(6 MARKS)

Computation of Comprehensive Machine Hour Rate for the Machine Shop

Operators' wages (as above) Rs. 17,100

Production Bonus 2,565

Power consumed 8,050

Supervision and indirect labour 3,300

Lighting and electricity 1,200

Repairs and maintenance (3% of Rs. 8 lakhs) $\div 2$ 12,000

Insurance (given for 12 months: reduced to 50% for 6 months) 20,000

Depreciation for 6 months 40,000

Other sundry works expenses for 6 months 6,000

General management expenses for 6 months 27,265

Total overheads for 6 months 1,37,480

Comprehensive Machine Hour Rate = $1,37,480 \div 5760 \text{ hrs} = \text{Rs. } 23.87$ per hour.

(4 MARKS)

ANSWER-3

ANSWER-A

Working Notes

(i)	Total estimated costs for the year ending 31-3-1996 Salary	Rs, 2,75,000
	Repairs to Buildings	1,30,500
	Laundry and Linen	40,000
	Interior and Tapestry	87,500
	Miscellaneous Expenses	95,400
	Depreciation:	
	Buildings Rs. 80,00,000 x 0.05 =Rs 4,00,000	
	Furniture Rs. 20,00,000 x 0.15 =	<u>3,00,000</u>
	Total Costs	<u>13,28,400</u>
(ii)	Number of room-days available in a year :	
(a)	Season's occupancy for 6 months: (0.80 x 50 x 30 x 6) = 7,200 room-days	
(b)	Off-season's occupancy for 6 months: (0.40 x 50 x 30 x 6) = <u>3,600</u> room-days	
	Total room-days in the year	<u>10,800</u>
(iii)	Attendants' salary 10,800 x Rs. 5 = Rs. 54,000	
(iv)	Lighting Bill:	
	-During season at full rate 7,200 days x (Rs. 120 ÷ 30) =	Rs. 28,800
	-During off-season at full rate (0.40 x 50 x 30 x 2) x (Rs. 120 ÷ 30) =	4,800
	-During off-season at concessional rate (0.40 x 50 x 30 x 4) x (Rs. 30 ÷ 30)	<u>2,400</u>
		<u>36,000</u>

(A)	Total Estimated Costs:	
(i)	Estimated expenses as per (i) above	Rs.13,28,400
(ii)	Attendants' cost	54,000
(iii)	Lighting	<u>36,000</u>
		<u>14,18,400</u>
(B)	Total room-days to be charged	
	Season	7,200
	Off-season (50% x 3,600)	<u>1,800</u>
		<u>9,000</u>
(C)	Cost per room-day = Rs. 14,18,400 ÷ 9,000	Rs.157.60
	Add: Profit Margin 20% of rent or 25% of cost	<u>39.40</u>
	Room rent	<u>197.00</u>

During season rent of Rs. 197.00 per day is to be charged.

During off-season rent of Rs. 98.50 (i.e. Rs.197/2) is to be charged.

Notes:

- (i) First total cost to be recovered should be collected.
- (ii) Distinction between room-days available and room-days charged should be understood, i.e., room-days on which half rent is to be charged should be expressed in terms of full room-days.

(10 MARKS)

ANSWER-B

(a) Material price variance:

$$= (\text{Standard price} - \text{Actual Price}) \times \text{Actual quantity}$$

$$= (\text{Rs. } 4 - \text{Rs. } 4.10) \times 5,000 = \text{Rs. } 500 \text{ Adv.}$$

(b) Material usage variance:

$$= (\text{Std. quantity for actual output} - \text{Actual qty.}) \times \text{Std. price}$$

$$= (600 \times 5 - 3,500) \times 4 = \text{Rs. } 2,000 \text{ Adv.}$$

(c) Labour Rate Variance:

$$= (\text{Standard rate} - \text{Actual rate}) \times \text{Actual hours}$$

$$= (\text{Rs. } 10 - \text{Rs. } 9) \times 1,700 = \text{Rs. } 1,700 \text{ Fav.}$$

(d) Labour Efficiency Variance:

$$= (\text{Standard hours for actual output} - \text{Actual hours}) \times \text{Standard rate}$$

$$= (600 \times 3 - 1,700) \times \text{Rs. } 10$$

$$= \text{Rs. } 1,000 \text{ Fav.}$$

(e) Variable Overhead Expenditure Variance

$$= (\text{Actual Hours} \times \text{Standard Rate}) - \text{Actual Overhead}$$

$$= (1,700 \times \text{Rs. } 1) - \text{Rs. } 1,900$$

$$= \text{Rs. } 200 \text{ Adv.}$$

(f) Variable Overhead Efficiency Variance:

$$= (\text{Std. hours for actual output} - \text{Actual hours}) \times \text{Std. rate}$$

$$= (600 \times 3 - 1,700) \times \text{Rs. } 1 = \text{Rs. } 100 \text{ Fav.}$$

(g) Fixed Overhead Expenditure Variance:

$$= (\text{Budgeted overhead} - \text{Actual overhead})$$

$$= (1,800 \times 0.50 - 900) = \text{Nil}$$

(h) Fixed Overhead Volume Variance:

$$= (\text{Std. hours for actual output} - \text{Budgeted hours}) \times \text{Std. rate}$$

$$= (600 \times 3 - 1,800) \times \text{Rs. } 0.50 = \text{Nil}$$

(i) Fixed Overhead Capacity Variance:

$$= (\text{Budgeted hours} - \text{Actual Hours}) \times \text{Standard rate}$$

$$= (1,800 - 1,700) \times \text{Rs. } 0.50 = \text{Rs. } 50 \text{ Adv.}$$

(j) Fixed Overhead Efficiency Variance:

$$= (\text{Std. hours for actual output} - \text{Actual hours}) \times \text{Standard rate}$$

$$= (600 \times 3 - 1,700) \times \text{Rs. } 0.50 = \text{Rs. } 50 \text{ Fav.}$$

(10*0.5 = 5 MARKS)

Verification:	(Rs.)	(Rs.)
Overhead recovered: 600 units @ Rs.4.50		2,700
Actual Overhead:		
Variable	1,900	
Fixed	900	2,800
		100 Adv.

Variable expenditure variance		200 Adv
Variable Efficiency variance		100 Fav.
Fixed expenditure variance		Nil
Fixed overhead volume variance		Nil
		100 Adv.

(2 MARKS)

Reconciliation Statement

Standard Cost: 600 units @ Rs.54.50		32,700	
Actual Cost:	38,600		
Less: Material Stock at standard cost: (1,500 × Rs.4)	6,000	(32,600)	100 Fav.
Variances:	Adv. (Rs.)	Fav. (Rs.)	
Material price	500		
Material usage	2,000		
Labour rate		1,700	
Labour efficiency		1,000	
Variable expenditure	200		
Variable efficiency		100	
Total	2,700	2,800	100 Fav.

(3 MARKS)

ANSWER-4

ANSWER-A

Particulars	Rs.	Particulars	Rs.
To Materials issued	90,000	By Material sold	18,125
To wages paid 75,000		By plant sold	2,875
Add : Outstanding 6,250	81,250	By plant at site c/d	7,750
To plant _____	25,000	By Material at site c/d	4,250

To sundry expenses	7,250		By work – in – Progress c/d		
Less : Prepaid	625	6,625	Work certified	2,18,750	
To Establishment charges		14,625	(Rs. 1,75,000 ÷ 80%)		
To costing P & L A/c. (Rs. 18,125 – Rs. 15,000)		3,125	Work uncertified	27,375	2,46,125
To Notional Profit (Profit for the year)		58,500			
		2,79,125			2,79,125

(5 MARKS)

Calculation of Estimated Profit

			Rs.	Rs.
1)	Material consumed	(90,000 + 3,125 – 18,125)	75,000	
	Add: Further consumption		85,750	1,60,750
2)	Wages:		81,250	
	Add : Further cost	(87,325 – 6,250)	81,075	
	Add : Outstanding		8,300	1,70,625
3)	Plant used	(25,000 – 2,875)	22,125	
	Add: Further plant introduced		31,250	
	Less : Closing balance of plant		(3,750)	49,625
4)	Establishment charges		14,625	
	Add : Further charges for nine months	(14,625 × 9/12)	10,969	25,594
5)	Sundry expenses		7,250	
	Add : Further expenses		6,875	14,125

6)	Reserve for contingencies			10,800
	Estimated profit	(balancing figure)		68,481
	Contract price			5,00,000

(5 MARKS)

ANSWER-B

Statement of Equivalent Production

Process III

Input Details	Units	Output Particulars	Units	Equivalent Production					
				Material-A		Material-B		Labour & Overhead	
				%	Units	%	Units	%	Units
Opening WIP	1,600	Work on Op. WIP	1,600	-	-	20	320	40	640
Process-II Transfer	55,400	Introduced & completed during the month	50,600	100	50,600	100	50,600	100	50,600
		Normal loss (5% of 52,800 units)	2,640	-	-	-	-	-	-
		Closing WIP	4,200	100	4,200	70	2,940	50	2,100
		Abnormal Gain	(2,040)	100	(2,040)	100	(2,040)	100	(2,040)
	57,000		57,000		52,760		51,820		51,300

Working note:

Production units = Opening units + Units transferred from Process-II – Closing Units

$$= 1,600 \text{ units} + 55,400 \text{ units} - 4,200 \text{ units}$$

= 52,800 units

(2 MARKS)

Statement of Cost

	Cost (Rs.)	Equivalent units	Cost per equivalent units (Rs.)
Material A (Transferred from previous process)	6,23,250		
Less: Scrap value of normal loss (2,640 units × Rs. 5)	(13,200)		
	6,10,050	52,760	11.5627
Material B	2,12,400	51,820	4.0988
Labour	96,420	51,300	1.8795
Overheads	56,400	51,300	1.0994
	9,75,270		18.6404

(2 MARKS)

Statement of apportionment of Process Cost

		Amount (Rs.)	Amount (Rs.)
Opening WIP	Material A		24,000
Completed opening WIP units- 1600	Material B (320 units × Rs. 4.0988)	1311.62	
	Wages (640 units × Rs. 1.8795)	1202.88	
	Overheads (640 units × Rs. 1.0994)	703.62	3,218.12
Introduced & Completed- units 50,600	50,600 units × Rs. 18.6404		9,43,204.24
Total cost of 52,200 finished goods units			9,70,422.36
Closing WIP units- 4,200	Material A (4,200 units × Rs.		48,563.34

	11.5627)		
	Material B (2,940 units × Rs. 4.0988)		12,050.47
	Wages (2,100 units × Rs. 1.8795)		3,946.95
	Overhead (2100 units x Rs. 1.0994)		2,308.74
			66,869.50
Abnormal gain units - 2,040	(2,040 units × Rs. 18.6404)		38026.42

(3 MARKS)

Process III A/c

Particulars		Units	Amount (Rs.)	Particulars		Units	Amount (Rs.)
To	Balance b/d	1,600	24,000	By	Normal loss	2,640	13,200
To	Process II A/c	55,400	6,23,250	By	Finished goods	52,200	9,70,422.36
To	Direct material		2,12,400	By	Closing WIP	4,200	66,874.06*
To	Direct wages		96,420				
To	Production overheads		56,400				
To	Abnormal gain	2,040	38,026.42				
		59,040	10,50,496.42			59,040	10,50,496.42

* Difference in figure due to rounding off has been adjusted with closing WIP

(3 MARKS)

ANSWER-5

ANSWER-A

(i) **Production Budget (in units) for the year ended 31st March 2016**

	Product M	Product N
Budgeted sales (units)	28,000	13,000
<i>Add:</i> Increase in closing stock	320	160
No. good units to be produced	28,320	13,160
Post production rejection rate	4%	6%
No. of units to be produced	29,500	14,000
	$\left\{ \frac{28,320}{0.96} \right\}$	$\left\{ \frac{13,160}{0.94} \right\}$

(3 MARKS)

Purchase budget (in kgs and value) for Material Z

	Product M	Product N
No. of units to be produced	29,500	14,000
Usage of Material Z per unit of production	5 kg.	6 kg.
Material needed for production	1,47,500 kg.	84,000 kg.
Materials to be purchased	1,63,889 kg.	88,421 kg.
	$\left\{ \frac{1,47,500}{0.9} \right\}$	$\left\{ \frac{84,000}{0.95} \right\}$
Total quantity to be purchased	2,52,310 kg.	
Rate per kg. of Material Z	Rs.36	
Total purchase price	Rs.90,83,160	

(3 MARKS)

(ii) Calculation of Economic Order Quantity for Material Z

(1 MARK)

$$\begin{aligned} \text{EOQ} &= \sqrt{\frac{2 \times 252310 \text{ kg} \times 320}{\text{Rs.}36 \times 11\%}} \\ &= \sqrt{\frac{16,14,78,400}{\text{Rs.}3.96}} = 6,385.72 \text{ kg.} \end{aligned}$$

(iii) Since, the maximum number of order per year can not be more than 40 orders and the maximum quantity per order that can be purchased is 4,000 kg. Hence, the total quantity of Material Z that can be available for production: **(3 MARKS)**

$$= 4,000 \text{ kg.} \times 40 \text{ orders} = 1,60,000 \text{ kg}$$

	Product M	Product N
Material needed for production to maintain the same production mix	1,03,929 kg. $\left(1,60,000 \times \frac{1,63,889}{2,52,310}\right)$	56,071 kg. $\left(1,60,000 \times \frac{88421}{252310}\right)$
Less: Process wastage	10,393 kg.	2,804 kg.
Net Material available for production	93,536 kg.	53,267 kg.
Units to be produced	18,707units $\left\{\frac{93,536 \text{ kg.}}{5 \text{ kg.}}\right\}$	8,878units $\left\{\frac{53,267 \text{ kg.}}{6 \text{ kg.}}\right\}$

ANSWER-B

The total production overheads are Rs.26,00,000:

$$\text{Product A: } 10,000 \times \text{Rs. } 30 = \text{Rs. } 3,00,000$$

$$\text{Product B: } 20,000 \times \text{Rs. } 40 = \text{Rs. } 8,00,000$$

$$\text{Product C: } 30,000 \times \text{Rs. } 50 = \text{Rs. } 15,00,000$$

On the basis of ABC analysis this amount will be apportioned as follows:

Statement Showing "Activity Based Production Cost"

Activity Cost Pool	Cost Driver	Ratio	Total Amount (Rs.)	A (Rs.)	B (Rs.)	C (Rs.)
Stores Receiving	Purchase Requisition	6:9:10	2,96,000	71,040	1,06,560	1,18,400
Inspection	Production Runs	5:7:8	8,94,000	2,23,500	3,12,900	3,57,600
Dispatch	Orders Executed	6:9:10	2,10,000	50,400	75,600	84,000
Machine Setups	Setups	12:13:15	12,00,000	3,60,000	3,90,000	4,50,000
Total Activity Cost				7,04,940	8,85,060	10,10,000
Quantity Produces				10,000	20,000	30,000
Unit Cost (Overheads)				70.49	44.25	33.67
<i>Add: Conversion Cost (Material + Labour)</i>				80	80	90
Total				150.49	124.25	123.67

(7 MARKS)

ANSWER-6**ANSWER-A**

(5 MARKS)

Cost plus contracts have the following advantages:

- The Contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on the contract.
- It is useful specially when the work to be done is not definitely fixed at the time of making the estimate.
- Contractee can ensure himself about 'the cost of the contract', as he is empowered to examine the books and documents of the contractor to ascertain the veracity of the cost of the contract.

ANSWER-B**(5 MARKS)**

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.

ANSWER-C**(5 MARKS)****The advantages of zero-based budgeting are as follows:**

- It provides a systematic approach for the evaluation of different activities and rank them in order of preference for the allocation of scarce resources.
- It ensures that the various functions undertaken by the organization are critical for the achievement of its objectives and are being performed in the best possible way.
- It provides an opportunity to the management to allocate resources for various activities only after having a thorough cost-benefit-analysis. The chances of arbitrary cuts and enhancement are thus avoided.
- The areas of wasteful expenditure can be easily identified and eliminated.
- Departmental budgets are closely linked with corporation objectives.
- The technique can also be used for the introduction and implementation of the system of 'management by objective.' Thus, it cannot only be used for fulfillment of the objectives of traditional budgeting but it can also be used for a variety of other purposes.

Distinction between Job and Batch Costing:

Sr. No	Job Costing	Batch Costing
1	Method of costing used for non- standard and non-repetitive products produced as per customer specifications and against specific orders.	Homogeneous products produced in a continuous production flow in lots.
2	Cost determined for each Job.	Cost determined in aggregate for the entire Batch and then arrived at on per unit basis.
3	Jobs are different from each other and independent of each other. Each Job is unique.	Products produced in a batch are homogeneous and lack of individuality