



J.K. SHAH[®]
TEST SERIES

Evaluate Learn Succeed

SUGGESTED SOLUTION

INTERMEDIATE M'19 EXAM

SUBJECT- COSTING

Test Code - PIN 5043

BRANCH - () (Date :)

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

Tel : (022) 26836666

ANSWER-1

ANSWER-A

- (i) **Reorder Quantity (ROQ)** = 1,196 kg. (*Refer to working note*)
- (ii) **Reorder level (ROL)** = Maximum usage × Maximum re-order period
= 450 kg. × 8 weeks = 3,600 kg.
- (iii) **Maximum level** = ROL + ROQ – (Min. usage × Min. re-order period)
= 3,600 kg. + 1,196 kg. – (100 kg. × 4 weeks)
= 4,396 kg.
- (iv) **Minimum level** = ROL – (Normal usage × Normal re-order period)
= 3,600 kg. – (275 kg. × 6 weeks)
= 1,950 kg.
- (v) **Average stock level** = $\frac{1}{2}$ (*Maximum level + Minimum level*)
= $\frac{1}{2}$ (4396 kg. + 1950 kg.)
= 3173 kg.

OR

$$\text{Minimum level} + \frac{1}{2} ROQ$$

$$1,950 \text{ kg.} + \frac{1}{2} \times 1196 \text{ kg.}$$

$$= 2,548 \text{ kg.}$$

Working Note

$$\text{Annual consumption of raw material (A)} = (275 \text{ kg.} \times 52 \text{ weeks}) = 14,300 \text{ kg.}$$

$$\text{Cost of placing an order (O)} = \text{Rs. } 100$$

$$\text{Carrying cost per kg. Per annum (c} \times \text{i)} = \text{Rs. } 10 \times 20\% = \text{Rs. } 2$$

$$\text{Economic order quantity (EOQ)} = \sqrt{\frac{2AO}{c \times i}}$$

$$= \sqrt{\frac{2 \times 14300 \text{ kgs} \times \text{Rs.}100}{\text{Rs.}2}} = 1196 \text{ kg. (approx)}$$

(5 MARKS)

ANSWER-B

Actual production of P = 250 units

Standard quantity of material A for actual production = 2 kg. X 250 units = 500 kg.

(SQ) Actual quantity of material A for actual production = 1.8 kg. X 250 units = 450 kg.

(AQ) Standard price per kg. of material A = Rs. 6 (SP)

Actual price per kg. of material A = Rs. 8 (AP)

(1) Total Material Cost Variance = (Standard Price X Standard Quantity)
– (Actual Price X Actual Quantity)

$$= (\text{Rs. } 6 \times 500 \text{ kg.}) - (\text{Rs. } 8 \times 450 \text{ kg.})$$

$$= \text{Rs. } 3,000 - \text{Rs. } 3,600 = \text{Rs. } 600 \text{ (A)}$$

(2) Material Price Variance = (Standard Price – Actual Price) X Actual Quantity
= (Rs. 6 – Rs. 8) X 450 kg. = 900 (A)

(3) Material Usage Variance = (Standard Quantity – Actual Quantity) X Standard Price
= (500 kg. – 450 kg.) X Rs. 6 = 300 (F)

(5 MARKS)

ANSWER-C

(i) Selling price per unit = Margin of safety in rupee value / Margin of safety in quantity

$$= 375000 / 15000 \text{ units} = \text{Rs. } 25$$

(ii) Profit = Sales Value – Total Cost
= Selling price per unit × (BEP units + MoS units) – Total Cost
= Rs. 25 × (5,000 + 15,000) units – Rs. 3,87,500
= Rs. 5,00,000 – Rs. 3,87,500 = Rs. 1,12,500

(iii) Profit/ Volume (P/V) Ratio = $\frac{\text{Profit}}{\text{Margin of safety in rupee value}} \times 100$

$$= \frac{112500}{375000} \times 100 = 30\%$$

(iv) Break Even Sales (in Rupees) = BEP units × Selling Price per unit
= 5,000 units × Rs. 25 = Rs. 1,25,000

(v) Fixed Cost = Contribution – Profit
= Sales Value × P/V Ratio – Profit
= (Rs. 5,00,000 × 30%) – Rs. 1,12,500
= Rs.1,50,000 – Rs. 1,12,500 = Rs. 37,500

(5*1 = 5 MARKS)

ANSWER-D

Contract Account for the year ended 31st March, 2014

	(Rs.'000)		(Rs.' 000)
To Material issued to site	5,000	By Material at site	1,800
		By Material returned	100
To Direct wages 3,800		By Cost of contract	8,780
Add: Outstanding wages <u>110</u>	3,910		
To Plant hire	700		
To Site office cost	270		
To Direct expenses	500		
To Depreciation (special plant)	300		
	10,680		10,680
To Cost of contract	8,780		10,000
To Profit & Loss A/c	1,200		
To W-I-P (Profit in reserve) c/d	20	By Work certified	
	10,000		10,000

Working Notes

1. Percentage of contract completion = Value of work certified / Value of the contract x 100

$$= \frac{100 \text{ lakhs}}{108 \text{ lakhs}} \times 100 = 92.59\%$$

2. Since the percentage of Contract completion is more than 90% therefore the profit to be taken to Profit and Loss Account can be computed by using the following formula.

Profit to be taken to P & L A/c

= Budget/ Estimated Profit x cash received/ work certified x work certified/ contract price

$$= 1,800 \times \frac{7,200}{10,000} \times \frac{10,000}{10,800}$$

= Rs. 1,200 lakhs

(5 MARKS)

ANSWER-2

ANSWER-A

- (a) Cost sheet for the year ended 31st March, 2018.

Units produced - 14,000 units Units sold

- 14,153 units

Particulars	Amount (Rs.)
Raw materials purchased	42,25,000
Add: Freight Inward	1,00,000
Add: Opening value of raw materials	2,28,000
Less: Closing value of raw materials	(3,05,000)
	42,48,000
Less: Sale of scrap of material	8,000

Materials 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
<i>Add:</i> Opening value of W-I-P	1,92,500
<i>Less:</i> Closing value of W-I-P	(1,40,700)
Factory Cost	68,27,000
<i>Add:</i> 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

(10 MARKS)

ANSWER-B

Process- I Account

Particulars	Units	Amount (Rs.)	Particulars	Units	Amount (Rs.)
To Input	25,000	2,00,000	By Normal wastage	2,500	24,750
To Material		1,92,000	(2,500 units × Rs. 9.90)	500	16,250
To Direct Labour		2,24,000	By Abnormal loss A/c	22,000	7,15,000
To Manufacturing Exp.		1,40,000	(500 units × Rs. 32.50)		
	25,000	7,56,000	By Process- II	25,000	7,56,000
			(22,000 units × Rs. 32.50)		

$$\text{Cost per unit} = \frac{756000 - 24750}{25000 \text{ units} - 2500 \text{ units}} = \text{Rs. } 32.50 \text{ per unit}$$

(3 MARKS)

Process- II Account

Particulars	Units	Amount (Rs.)	Particulars	Units	Amount (Rs.)
To	22,000	7,15,000	By Normal wastage	2,200	18,920
Process- I		96,020	(2,200 units × Rs. 8.60)	20,000	9,90,000
To			By Finished stock		
Material		1,28,000	(20,000 units × Rs. 49.50)		
To Direct Labour		60,000			
		9,900			

To Manufacturing Exp. To Abnormal Gain A/c (200 units × Rs. 49.50)	200				
	22,200	10,08,920		22,200	10,08,920

$$\text{Cost per unit} = \frac{999020 - 18920}{22000 \text{ units} - 2200 \text{ units}} = \text{Rs. } 49.50 \text{ per unit}$$

(3 MARKS)

Abnormal Loss Account

Particulars	Units	Amount (Rs.)	Particulars	Units	Amount (Rs.)
To Process- I A/c	500	16,250	By Cash (Sales)	500	4,950
			(500 units × Rs. 9.90)		
			By Costing Profit and Loss A/c		11,300
	500	16,250		500	16,250

(2 MARKS)

Abnormal Gain Account

Particulars	Units	Amount (Rs.)	Particulars	Units	Amount (Rs.)
To Normal wastage (200 units × Rs. 8.60)	200	1,720	By Process II A/c	200	9,900
To Costing Profit and Loss	200	8,180			
		9,900		200	9,900

(2 MARKS)

ANSWER-3

ANSWER-A

Operating Cost Sheet for the month of October, 2013

Particulars		Amount (Rs.)
A.	Fixed Charges:	
	Manager's salary (Rs. 30,000 × 60%)	18,000
	Drivers' Salary (Rs. 4,000 × 30 drivers)	1,20,000
	Helpers' wages (Rs. 2,000 × 25 helpers)	50,000
	Labourer wages (Rs. 1,500 × 20 labourers)	30,000
	Insurance (Rs. 24,000 ÷ 12 months)	2,000
	Road licence (Rs. 60,000 ÷ 12 months)	5,000
	Garage rent (Rs. 90,000 ÷ 12 months)	7,500
	Transport Technical Service Charges	10,000
	Share in workshop expenses	10,000
	Total (A)	28,000
		2,70,500

	Variable Charges:	12,60,000
	Cost of diesel (Working Note 1)	23,500
	Lubricant, Oil etc.	2,00,000
	Depreciation	1,25,000
	Replacement of Tyres, Tubes & other parts Consumable Stores	45,000
	Electricity and Gas charges	5,000
	Total (B)	
	Total Cost (A + B)	16,58,500
C.	Total Ton-Kms. (Working Note 2)	19,29,000
D.	Cost per ton-km. (C ÷ D)	18,86,400
E.		1.022

Calculation of Chargeable Freight

Cost per ton-km. Rs. 1.022

Add: Profit @ 25% on freight or 33⅓% on cost Rs. 0.341

Chargeable freight per ton-km. Rs. 1.363 or Rs. 1.36

(8 MARKS)

Working Notes:

(2*1 = 2 MARKS)

1. Cost of Diesel:

Distance covered by each vehicle during October, 2013

= 200 k.m. x 2 x 25 days x 90 % = 9,000 km.

Consumption of diesel = $\frac{9000 \text{ k.m.} \times 20 \text{ vehicles}}{5 \text{ k.m.}} = 36000 \text{ litres}$

Cost of diesel = 36,000 litres x Rs. 35 = Rs. 12,60,000.

2. Calculation of total ton-km:

Total Ton-Km. = Total Capacity × Distance covered by each vehicle × Average Capacity Utilisation ratio.

$$= [(5 \times 9 \text{ ton}) + (6 \times 12 \text{ ton}) + (7 \times 15 \text{ ton}) + (2 \times 20 \text{ ton})] \times 9,000 \text{ k.m.} \times \left(\frac{90\% + 70\%}{2} \right)$$

$$= (45 + 72 + 105 + 40) \times 9,000 \text{ k.m.} \times 80\%$$

$$= 262 \times 9,000 \times 80\%.$$

ANSWER-B

(i) Statement Showing Overhead Cost per unit "Traditional Method"

	Gel Pen (Rs.)	Ball Pen (Rs.)
Units	5,500	24,000
Overheads (Rs.) (Refer to W.N.)	4,80,000 (20 x 24,000 hrs.)	10,80,000 (20 x 54,000 hrs.)
Overhead Rate per unit (Rs.)	87.27 (Rs. 4,80,000 / 5,500 units)	45 (Rs. 10,80,000 / 24,000 units)

Working Notes:

Overhead Rate per Machine Hour

$$= \frac{\text{Total overhead incurred by the company}}{\text{Total machine hours}}$$

$$= \frac{\text{Rs. 475020} + \text{Rs. 579988} + \text{Rs. 504992}}{24000 \text{ hours} + 54000 \text{ hours}} = \frac{1560000}{78000 \text{ hours}}$$

= Rs. 20 per machine hour

(4 MARKS)

(ii) Statement Showing "Activity Based Overhead Cost"

Activity Cost Pool	Cost Driver	Ratio	Total Amount (Rs.)	Gel Pen (Rs.)	Ball Pen (Rs.)
Volume Related Activity Costs	Machine hours	24:54	4,75,020	1,46,160	3,28,860
Setup Related Costs	No. of Setups	30:56	5,79,988	2,02,321	3,77,667
Purchase Related Costs	No. of Purchase Orders	240:448	5,04,992	1,76,160	3,28,832
Total Cost				5,24,641	10,35,359
Output (units)				5,500	24,000
Unit Cost (Overheads)				95.39	43.13

(4 MARKS)

	Gel Pen (Rs.)	Ball Pen (Rs.)
Overheads Cost per unit (Rs.) (Traditional Method)	87.27	45
Overheads Cost per unit (Rs.) (ABC)	95.39	43.13
Difference <i>per unit</i>	-8.12	+1.87

(Volume related activity cost, set up related costs and purchase related cost can also be calculated under Activity Base Costing using Cost driver rate. However, there will be no changes in the final answer.)

(2 MARKS)

ANSWER-4

ANSWER-A

(a) Labour turnover rate:

It comprises of computation of labour turnover by using following methods:

(i) Replacement Method:

$$\text{Labour turnover rate} = \frac{\text{No.of workers replaced}}{\text{Average number of workers}} \times 100$$

$$= \frac{75}{1000} \times 100 = 7.5\%$$

$$\text{Equivalent Annual Turnover Rate} = \frac{7.5 \times 365}{31} = 88.31\%$$

(ii) Separation Method:

$$\text{Labour turnover rate} = \frac{\text{No.of workers left} + \text{No.of workers discharged}}{\text{Average number of workers}} \times 100$$

$$= \frac{(40+60)}{(900+1100)/2} \times 100$$

$$= \frac{100}{1000} \times 100$$

$$= 10\%$$

$$\text{Equivalent Annual Turnover Rate} = \frac{10 \times 365}{31} = 117.74\%$$

(iii) Flux Method:

$$\text{Labour turnover rate} = \frac{\text{No.of separations} + \text{No.of accessions}}{\text{Average number of workers}} \times 100$$

$$= \frac{(100+300)}{(900+1100)/2} \times 100$$

$$= \frac{400}{1000} \times 100$$

$$= 40\%$$

$$\text{Equivalent Annual Turnover Rate} = \frac{40 \times 365}{31} = 470.97\%$$

(iii) Flux Method:

$$\text{Labour turnover rate} = \frac{\text{No. of separations} + \text{No. of replaced}}{\text{Average number of workers}} \times 100$$

$$= \frac{100+75}{1000} \times 100 = 17.5\%$$

$$\text{Equivalent Annual Turnover Rate} = \frac{17.5 \times 365}{31} = 206.05\%$$

(10 MARKS)

ANSWER-B

(a) Preparation of Production Budget (in nos.)

	October	November	December	January
Demand for the month (Nos.)	4,000	3,500	4,500	6,000
	700	900	1,200	1,300
<i>Add: 20% of next month's demand</i>	(950)	(700)	(900)	(1,200)
	3,750	3,700	4,800	6,100
<i>Less: Opening Stock Vehicles to be produced</i>				

(3 MARKS)

(b) Preparation of Purchase budget for Part-X

	October	November	December
Production for the month (Nos.)	3,750	3,700	4,800
	1,480	1,920	2,440
Add: 40% of next month's production	(40% of 3,700)	(40% of 4,800)	(40% of 6,100)
	5,230	5,620	7,240
	20,920	22,480	28,960
No. of units required for production Less: Opening Stock	(5,230 × 4 units) (4,800)	(5,620 × 4 units) (5,920) (1,480 × 4 units)	(7,240 × 4 units) (7,680) (1,920 × 4 units)
	16,120	16,560	21,280
No. of units to be purchased			

(3 MARKS)

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

	October	November	December	Total
Sales in nos.	4,000	3,500	4,500	12,000
Net Selling Price per unit* Sales Revenue (Rs. in lakh) Less: Cost of Sales (Rs. in lakh) (Sales unit × Cost per unit)	Rs. 3,46,150 13,846 11,428	Rs. 3,46,150 12,115.25 9,999.50	Rs. 3,46,150 15,576.75 12,856.50	41,538 34,284
Gross Profit (Rs. in lakh)	2,418	2,115.75	2,720.25	7,254

* Net Selling price unit = Rs. 3,95,600 – 12.5% commission on Rs. 3,95,600 = Rs. 3,46,150

(4 MARKS)

ANSWER-5

ANSWER-A

(a)

Computation of Machine Hour Rate

	Basis of apportionment	Total (Rs.)	Machines		
			A (Rs.)	B (Rs.)	C (Rs.)
(A) Standing Charges					
Insurance	Depreciation Basis (3:3:2)	8,000	3,000	3,000	2,000
Indirect Labour	Direct Labour (2:3:3)	24,000	6,000	9,000	9,000
Building maintenance expenses	Floor Space (2:2:1)	20,000	8,000	8,000	4,000
Rent and Rates	Floor Space (2:2:1)	1,20,000	48,000	48,000	24,000
Salary of foreman	Equal	2,40,000	80,000	80,000	80,000
Salary of attendant	Equal	60,000	20,000	20,000	20,000
Total standing charges		4,72,000	1,65,000	1,68,000	1,39,000
Hourly rate for standing charges			84.70	86.24	71.36
(B) Machine Expenses:					
Depreciation	Direct	20,000	7,500	7,500	5,000
Spare parts	Final estimates	13,225	4,600	5,750	2,875
Power	K.W. rating (3:2:3)	40,000	15,000	10,000	15,000
Consumable Stores	Direct	8,000	3,000	2,500	2,500

Total Machine expenses	81,225	30,100	25,750	25,375
Hourly Rate for Machine expenses		15.45	13.22	13.03
Total (A + B)	553,225	1,95,100	1,93,750	1,64,375
Machine Hour rate		100.15	99.46	84.38

Working Notes:

(i) Calculation of effective working hours:

No. of full off-days = No. of Sunday + No. of holidays
= 52 + 12 = 64 days

No. of half working days = 52 days – 2 holidays = 50 days

No. of full working days = 365 days – 64 days – 50 days = 251 days
Total working Hours = {(251 days × 8 hours) + (50 days × 4 hours)}
= 2,008 hours + 200 = 2,208 hours.

Total effective hours = Total working hours × 90% - 2% for break-down
= 2,208 hours × 90% - 2% (2,208 hours × 90%)
= 1,987.2 hours – 39.74 hours
= 1947.46 or Rounded up to 1948 hours.

(ii) Amount of spare parts is calculated as under:

	A (Rs.)	B (Rs.)	C (Rs.)
Preliminary estimates	4,000	4,000	2,000
Add: Increase in price @ 15%	600	600	300
	4,600	4,600	2,300
Add: Increase in consumption @ 25%	-	1,150	575
Estimated cost	4,600	5,750	2,875

(iii) Amount of Indirect Labour is calculated as under:

	(Rs.)
Preliminary estimates	20,000
Add: Increase in wages @ 20%	4,000
	24,000

(iv) Interest on capital outlay is a finance cost, therefore it has been excluded from the cost accounts.

(10 MARKS)

ANSWER-B

Stores Ledger Control A/c

Particulars	(Rs.)	Particulars	(Rs.)
To Balance b/d	9,000	By Work in Process	48,000
	48,000	By Overhead Control A/c	6,000
To General Ledger Adjustment A/c		By Overhead Control A/c (Deficiency)	1,800*
To Work in Process A/c	24,000	By Balance c/d	
			25,200
	81,000		81,000

*Deficiency assumed as normal (alternatively can be treated as abnormal loss)

(3 MARKS)

Work in Progress Control A/c

Particulars	(Rs.)	Particulars	(Rs.)
To Balance b/d	18,000	By Stores Ledger Control a/c	24,000
To Stores Ledger Control A/c	48,000	By Costing P/L A/c (Balancing figures being Cost of finished goods)	1,20,000
To Wages Control A/c	18,000	By Balance c/d	12,000
To Overheads Control a/c	72,000		
	1,56,000		1,56,000

(3 MARKS)

Overheads Control A/c

Particulars	(Rs.)	Particulars	(Rs.)
To Stores Ledger Control A/c	6,000	By Work in Process A/c	72,000
To Stores Ledger Control A/c	1,800	By Balance c/d (Under absorption)	13,800
To Wages Control A/c (Rs. 21,000- Rs.18,000)	3,000		
To Gen. Ledger Adjust. A/c	75,000		
	85,800		85,800

(2 MARKS)

Costing Profit & Loss A/c

Particulars	(Rs.)	Particulars	(Rs.)
To Work in progress	1,20,000	By Gen. ledger Adjust. A/c (Sales) (1,20,000+12,000)	1,32,000
To Gen. Ledger Adjust. A/c (Profit)	12,000		
	1,32,000		1,32,000

(2 MARKS)

ANSWER-6

ANSWER-A

Operational level staffs- The operational level staffs like supervisors, foreman, team leaders are requiring information

- (i) to know the objectives and performance goals for them
- (ii) to know product and service specifications like volume, quality and process etc.
- (iii) to know the performance parameters against which their performance is measured and evaluated.
- (iv) to know divisional (responsibility centre) profitability etc.

(5 MARKS)

ANSWER-B

Zero based budgeting is superior to traditional budgeting: Zero based budgeting is superior to traditional budgeting in the following manner:

- It provides a systematic approach for evaluation of different activities.
- It ensures that the function undertaken are critical for the achievement of the objectives.
- It provides an opportunity for management to allocate resources to various activities after a thorough – cost benefit analysis.
- It helps in the identification of wasteful expenditure and then their elimination. It facilitates the close linkage of departmental budgets with corporate objectives.
- It helps in the introduction of a system of Management by Objectives

(5 MARKS)

ANSWER-C

Job costing: In this method of costing, cost of each job is ascertained separately. It is suitable in all cases where work is undertaken on receiving a customer's order like a printing press, motor work shop, etc. This method of costing is used for non-standard and non-repetitive products produced as per customer specifications and against specific orders. Jobs are different from each other and independent of each other. Each Job is unique.

Batch Costing: It is the extension of Job costing. Homogeneous products are produced in a continuous production flow in lots. A batch may represent a number of small orders passed through the factory in batch. Each batch here is treated as a unit of cost and thus separately costed. Here cost per unit is determined by dividing the cost of the batch by number of units produced in the batch.

(5 MARKS)

ANSWER-D

Materials may become obsolete under any of the following circumstances:

- (i) where it is a spare part or a component of a machinery used in manufacture and that machinery becomes obsolete;
- (ii) where it is used in the manufacture of a product which has become obsolete;
- (iii) where the material itself is replaced by another material due to either improved quality or fall in price.

In all three cases, the value of the obsolete material held in stock is a total loss and immediate steps should be taken to dispose it off at the best available price. The loss arising out of obsolete materials on abnormal loss does not form part of the cost of manufacture.

(5 MARKS)

ANSWER-E

Activity based budgeting analyse the resource input or cost for each activity. It provides a framework for estimating the amount of resources required in accordance with the budgeted level of activity. Actual results can be compared with budgeted results to highlight both in financial and non-financial terms those activities with major discrepancies from budget for potential reduction in supply of resources. It is a planning and control system which seeks to support the objectives of continuous improvement. It means planning and controlling the expected activities of the organization to derive a cost-effective budget that meet forecast workload and agreed strategic goals. ABB is the reversing of the ABC process to produce financial plans and budgets.

(2 MARKS)

Key Elements of ABB

The three key elements of activity based budgeting are as follows:-

- Type of work to be done
- Quantity of work to be done
- Cost of work to be done

(1.5 MARKS)

Benefits of ABB

Few benefits of activity based budgeting are as follows:-

1. Activity Based Budgeting (ABB) can enhance accuracy of financial forecasts and increasing management understanding.
2. When automated, ABB can rapidly and accurately produce financial plans and models based on varying levels of volume assumptions.
3. ABB eliminates much of the needless rework created by traditional budgeting techniques.

(1.5 MARKS)