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SUGGESTED SOLUTION

IPCC NOVEMBER 2016 EXAM

COSTING

Test Code - I N J 1 0 7 1

BRANCH - (MUMBAI) (Date : 19.06.2016)

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Answer-1 (a) :

Computation of Break-even point in units:

	2,000 units	**1,500 units**
Production Overhead I: Fixed Cost (Rs.)	6,000	6,000
	(2,000 unit x Rs. 3)	(1,500 unit x Rs. 4)
Selling price – Material and labour (Rs.) (A)3	8	8
Production Overhead II (Variable Overhead) (B)	2	2
Contribution per unit (A) – (B)	6	6

(3 Marks)

$$\text{Break-even point} = \frac{\text{Fixed Cost}}{\text{Contribution per unit}} = \frac{\text{Rs.6,000}}{\text{Rs.6}} = 1,000 \text{ units.}$$

(1 Mark)

Answer-1 (b) :

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

(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 = $\frac{\text{Rs.7,68,000}}{0.96}$ = 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)	Rs. 32,000
		Rs. 4,31,000

(iv) Calculation of total Fixed Costs:

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

(4 x 1 = 4 Marks)

(v) Calculation of P/V Ratio:

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

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

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

(b) Profit earned during the last year
= (Sales – Total Variable Costs) – Total Fixed Costs
= (Rs. 9,25,000 - Rs. 4,31,000) - Rs. 3,69,000
= Rs. 1,25,000

(c) Margin of Safety (%) = $\frac{\text{Sales - Break Even Sales}}{\text{Sales}} \times 100$

$= \frac{\text{Rs.9,25,000 - Rs.6,90,882}}{\text{Rs.9,25,000}} \times 100 = 25.31\%$

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

Profit = 90% (Rs. 9,25,000 - Rs. 4,31,000) - Rs. 3,69,000
= Rs. 4,44,600 - Rs. 3,69,000 = Rs. 75,600

(4 x 1 = 4 Marks)

Answer-2 :

Workings:

(a) Variable Overhead rate per unit

$$= \frac{\text{Difference of Overhead at two level}}{\text{Difference in Production units}}$$

$$= \frac{\text{Rs.2,10,000 - Rs.1,80,000}}{\text{10,000 units - 8,000 units}} = \text{Rs.15}$$

(b) Fixed Overhead = Rs. 1,80,000 – (8,000 units x Rs. 15) = Rs. 60,000

(c) Standard hours per unit of production $= \frac{\text{Std. Overhead Absorption Rate}}{\text{Std. Rate per hour}}$

$$= \frac{\text{Rs.20}}{\text{Rs.4}} = 5 \text{ hours}$$

(d) Standard Variable Overhead Rate per hour $= \frac{\text{Variable Overhead per unit}}{\text{Std. hour per unit}}$

$$= \frac{\text{Rs.15}}{\text{5 hours}} = \text{Rs.3}$$

(e) Standard Fixed Overhead Rate per hour = Rs. 4- Rs. 3 = Rs. 1

(f) Actual Variable Overhead = Rs. 2,95,000 – Rs. 62,500= Rs. 2,32,500

(g) Actual Variable Overhead Rate per Hour $= \frac{\text{Rs.2,32,500}}{\text{74,000 hours}} = \text{Rs.3.1419}$

(h) Budgeted hours = 12,000 units x 5 hours = 60,000 hours

(i) Standard Hours for Actual Production = 15,560 units x 5 hours = 77,800 hours

(4 Marks)

(i) Variable Overhead Efficiency and Expenditure Variance:

Variable Overhead Efficiency Variance = Std. Rate per hour (Std. Hours – Actual Hours)
= Rs. 3 (77,800 hours – 74,000 hours)
= Rs. 11,400 (F)

Variable Overhead Expenditure Variance = Actual Hours (Std. Rate - Actual Rate)
= 74,000 hours (Rs. 3 - Rs. 3.1419)
= Rs. 10,500 (A)

(2 Marks)

(ii) Fixed Overhead Efficiency and Capacity Variance:

Fixed Overhead Efficiency Variance = Std. Rate per Hour (Std. Hours-Actual Hours)
= Rs. 1(77,800 hours -74,000 hours) = Rs. 3,800 (F)

Fixed Overheads Capacity Variance = Std. Rate per Hour (Actual Hours -Budgeted Hours)
= Rs. 1(74,000 hours – 60,000 hours)
= Rs. 74,000 – Rs. 60,000= Rs. 14,000 (F)

(2 Marks)

Answer-3 :

(A) Costing books

Stores Control Account

Particulars	(Rs.)	Particulars	(Rs.)
To Balance b/d	32,000	By W.I.P. Control A/c	1,60,000
To General ledger adjustment A/c	1,58,000	By Work overhead control A/c	20,000
To Work in progress control A/c	80,000	By Costing Profit and Loss A/c	6,000
		By Balance c/d	84,000
	2,70,000		**2,70,000**

(1 Mark)

W.I.P. Control Account

Particulars	(Rs.)	Particulars	(Rs.)
To Balance b/d	60,000	By Stores control A/c	80,000
To Stores control A/c	1,60,000	By Costing profit and loss A/c (Cost of sales)	4,00,000
To Direct wages control A/c	65,000		
To Works overhead control A/c	2,40,000	By Balance c/d	45,000
	5,25,000		**5,25,000**

(1 Mark)

Works Overhead Control Account

Particulars	(Rs.)	Particulars	(Rs.)
To General ledger adjustment A/c	2,50,000	By W.I.P. Control A/c	2,40,000
To Store ledger control A/c	20,000	By Costing profit & loss A/c (under recovery)	30,000
	2,70,000		**2,70,000**

(1 Mark)

Costing Profit & Loss Account

Particulars	(Rs.)	Particulars		(Rs.)
To W.I.P. control A/c (Cost of sales)	4,00,000	By General ledger adjustment A/c		
To Works overhead control A/c	30,000	Cost of sales	4,00,000	
To Stores control A/c (shortage)	6,000	10% profit	40,000	4,40,000
To Profit	4,000			
	4,40,000			**4,40,000**

(2 Marks)

(B) Financial Books

Profit & Loss Account

Particulars		(Rs.)	Particulars		(Rs.)
To Opening stock			By Sales		4,40,000
Stores	32,000		By Closing stock:		
W.I.P.	60,000	92,000	Stores	84,000	
			W.I.P.	45,000	1,29,000
To Purchases		1,58,000	By Income from investment		10,000
To Wages incurred		70,000	By Loss		11,000
To Overheads incurred		2,50,000			
To Loss on sale of capital assets		20,000			
		5,90,000			**5,90,000**

(2 Marks)

Reconciliation statement

	(Rs.)	(Rs.)
Profit as per Cost Accounts		4,000
Add: Income from investment recorded in Financial accounts		10,000
		14,000

Less: Under absorption of wages in Cost accounts	5,000	
Loss on sales of capital asset only included in Financial accounts	20,000	25,000
Loss as per Financial accounts		11,000

(3 Marks)

Answer-4 :

(a) (i)

EPS Public School

Statement showing the expenses of operating a single bus and the fleet of 25 buses for a year

Particulars	**Per bus per annum (Rs.)**	**Fleet of 25 buses per annum (Rs.)**
Running costs : (A)		
Diesel (Refer to working note 1)	56,832	14,20,800
Repairs & maintenance costs: (B)	16,400	4,10,000
Fixed charges:		
Driver's salary		
(Rs. 5,000 × 12 months)	60,000	15,00,000
Cleaners salary		
(Rs.3,000 × 1/5th × 12 months)	7,200	1,80,000
Licence fee, taxes etc.	2,300	57,500
Insurance	15,600	3,90,000
Depreciation	93,750	23,43,750
Total fixed charges: (C)	1,78,850	44,71,250
Total expenses: (A+B+C)	2,52,082	63,02,050

(5 Marks)

(ii) Average cost per student per month in respect of students coming from a distance of:

(a)	4 km. from the school {Rs. 2,52,082 / (354 students × 12 months)} (Refer to Working Note 2)	Rs. 59.34
(b)	8 km. from the school (Rs. 59.34 ×2)	Rs. 118.68
(c)	16 km. from the school (Rs. 59.34 × 4)	Rs. 237.36

(1 Mark)

Working Notes:

1. Calculation of diesel cost per bus:

No. of trips made by a bus each day	4
Distance travelled in one trip both ways (16 km. × 2 trips)	32 km.
Distance traveled per day by a bus (32 km. × 4 shifts)	128 km.
Distance traveled during a month (128 km. × 24 days)	3,072 km.
Distance traveled per year (3,072 km. × 10 months)	30,720 km.
No. of litres of diesel required per bus per year (30,720 km. ÷ 10 km.)	3,072 litres
Cost of diesel per bus per year (3,072 litres × Rs. 18.50)	Rs. 56,832

(2 Marks)

2. Calculation of number of students per bus:

Bus capacity of 2 trips (60 students × 2 trips)	120 students
1/4th fare students (15% × 120 students)	18 students
½ fare 30% students (equivalent to 1/4th fare students)	72 students
Full fare 55% students (equivalent to 1/4th fare students)	264 students
Total 1/4th fare students	354 students

(2 Marks)

Answer-5 (a) :

Budgeted Cost Sheet for the year 2014

Particulars	**(Amount Rs.)**

Direct material consumed		12,00,000	
Add: 44% due to increased output		5,28,000	
		17,28,000	
Less: 6% for decline in price		1,03,680	16,24,320
Direct wages (manufacturing)		7,00,000	
Add: 60% increase		4,20,000	11,20,000
Prime cost			27,44,320
Manufactured Overhead:			
Fixed	3,60,000		
Add: 20% increase	72,000		
		4,32,000	
Variable	2,50,000		
Add: 60% increase	1,50,000		
		4,00,000	8,32,000
Cost of production			35,76,320
Add: 1/9 of Cost or 10% on selling price			3,97,369
Selling price			**39,73,689**

(4 Marks)

Production will increase by 60% but efficiency will decline by 10%.
160 – 10% of 160 = 144%
So increase by 44%.

(1 Mark)

Note: If we consider that variable overhead once will change because of increase in production (From Rs. 2,50,000 to Rs. 4,00,000) then with efficiency declining by 10% it shall be Rs. 3,60,000 and then again as mentioned in point No. (iii) of this question it will increase by 60% then variable overhead shall be Rs.3,60,000 x 160% = Rs. 5,76,000. Hence, total costs shall be Rs.37,52,320 and profit shall be 1/9th of Rs.37,52,320 = Rs.4,16,924. Thus, selling price shall be Rs. 41,69,244.

Answer-5 (b) :

Effective Machine hour for four-week period
= Total working hours – unproductive set-up time
= {(48 hours × 4 weeks) – {(4 hours × 4 weeks)}
= (192 – 16) hours) =176 hours.

(i) Computation of cost of running one machine for a four week period

		(Rs.)	(Rs.)
(A)	Standing charges (per annum)		
	Rent	5,400.00	
	Heat and light	9,720.00	
	Forman's salary	12,960.00	
	Other miscellaneous expenditure	18,000.00	
	Standing charges (per annum)	46,080.00	
	Total expenses for one machine for four week period $\left(\frac{\text{Rs.46,080}}{\text{3 Machines x 13 Four-week period}}\right)$		1,181.54
	Wages (48 hours × 4 weeks × Rs. 20 × 3 operators)		11,520.00
	Bonus {(176 hours × Rs. 20 × 3 operators) x 10%}		1,056.00
	Total standing charges		13,757.54
(B)	Machine Expenses		
	Depreciation = $\left(\text{Rs.52,000 x 10\% x } \frac{1}{\text{13 four-week period}}\right)$		400.00
	Repairs and maintenance (Rs.60 x 4 weeks)		240.00
	Consumable stores (Rs. 75 x 4 weeks)		300.00
	Power (176 hours x 20 units x Rs. 0 .80)		2,816.00
	Total machine expenses		3,756.00

(C) Total expenses (A) + (B) 17,513.54

(4 Marks)

(ii) Machine hour rate = $\frac{\text{Rs.17,513.54}}{\text{176 hours}}$ = Rs. 99.51

(1 Mark)

-x-x-x-