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IPCC NOVEMBER 2016 EXAM

COSTING &FINANCIAL MANAGEMENT

Test Code - I N J1 1 4 0

BRANCH - (MULTIPLE) (Date :02.10.2016)

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

(2 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

2. **Piece Rate System**

   15 articles are produced in 5 hours $\dfrac{5 \text{ hours}}{15 \text{ articles}}$ x 135 articles = 45 hours.

   Therefore, to produce 135 articles, hours required is
   Cost of producing 135 articles:

At basic time rate (45 hours × Rs.160) =	Rs. 7,200
Add: Bonus @ 20% on basic Piece rate	
$\left(\dfrac{\text{Rs.7,200}}{135 \text{ articles}} \text{ x 20% x 135 articles} \right) =$	Rs. 1,440
Earning for the week	Rs. 8,640

3. **Rowan Premium System**

(i)	Time allowed for producing 135 articles $\left(\dfrac{5 \text{ hours}}{5 \text{ articles}} \text{ x 135 articles x 150%} \right)$	67.5 hours
(ii)	Time taken to produce 135 articles =	40 hours
(iii)	Time Saved =	27.5 hours

   Earnings under Rowan Premium system:

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

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

4. **Halsey Premium System**

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

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

(3 Marks)

Answer-1 (b) :
Working Notes:

1.	Total Sales	= Break -even Sales + Margin of Safety
		= Rs. 400 crores + Rs. 120 crores
		= Rs. 520 crores
2.	Variable Cost	= Total Sales × (1- P/V Ratio)
		= Rs. 520 crores × (1 – 0.3)
		= Rs. 364 crores
3.	Fixed Cost	= Break-even Sales × P/V Ratio
		= Rs. 400 crores × 30%

4.	Profit	= Rs. 120 crores
		= Total Sales − (Variable Cost + Fixed Cost)
		= Rs. 520 crores − (Rs. 364 crores + Rs. 120 crores)
		= Rs. 36 crores

(3 Marks)

(i) Revised Sales figure to earn profit of Rs. 56 crores (i.e. Rs. 36 crores + Rs. 20 crores)

$$\text{Revised Sales} = \frac{\text{Revised Fixed Cost} + \text{Desired Profit}}{\text{Revised P/V Ratio**}}$$

$$= \frac{\text{Rs.185 crores} + \text{Rs.56 crores}}{28\%}$$

= Rs. 860.71 Crores

*Revised Fixed Cost

= Present Fixed Cost + Increment in fixed cost + Interest on additional Capital

= Rs. 120 crores + Rs. 50 crores + 15% of Rs. 100 crores

= Rs. 185 crores

**Revised P/V Ratio : Let current selling price per unit be Rs. 100.

Therefore, Reduced selling price per unit = Rs. 100 × 90% = Rs. 90

Revised Variable Cost on Sales = 70%+ 2% = 72%

Variable Cost per unit = Rs. 90 × 72% = Rs. 64.80

Contribution per unit = Rs. 90 - Rs. 64.80 = Rs. 25.20

$$\text{Revised P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{\text{Rs.25.2}}{\text{Rs.90}} \times 100 = 28\%$$

(ii) (a) $\text{Revised Break-even Sales} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}} \times 100 = \frac{\text{Rs.185 crores}}{28\%} = \text{Rs.660.71 crores}$

(b) Revised P/V Ratio = 28 % (as calculated above)

(c) Revised Margin of safety = Total Sales − Break-even Sales

= Rs. 860.71 crores - Rs. 660.71 crores

= Rs. 200 crores.

(2 Marks)

Answer-1 (c) :

Percentage change in earning per share to the percentage change in sales is calculated through degree of combined leverage,.

Hence, Computation of percentage of change in earnings per share, if sales increased by 5%

$$\text{Degree of Combined leverage(DCL)} = \frac{\% \text{ change in Earning per share (EPS)}}{\% \text{ Change in sales}}$$

Moreover, Degree of operating leverage (DOL) × Degree of Financial Leverage (DFL) = Degree of combined leverage (DCL)

$$\text{Or, DOL} \times \text{DFL} = \frac{\% \text{ change in Earning per share (EPS)}}{\% \text{ change in sales}}$$

$$\text{Or, } 1.625 \times 3.5 \text{ [Refer to working notes (i) and (ii)]} = \frac{\% \text{ change in Earning per share (EPS)}}{5}$$

$$\text{Or, } 5.687 = \frac{\% \text{ change in Earning per share (EPS)}}{5}$$

Or, % change in EPS = 5.687 × 5= 28.4375%

So, If sales is increased by 5 percent, Percentage of change in earning per share will be 28.4375 %

(3 Marks)

Working Notes:

(i) Degree of operating leverage (DOL) $= \frac{\text{Contribution}}{\text{EBIT}} = \frac{(\text{Rs.1,120} + \text{Rs.700 lakhs})}{\text{Rs.1,120 lakhs}} = 1.625$

(ii) Degree of financial leverage (DFL) $= \frac{\text{EBI}}{\text{PBT}} = \frac{\text{Rs.1,120}}{\text{Rs.320}} = 3.5$

(2 Marks)

Answer-1 (d) :
Workings:

(i)   Cost of Equity $\left(K_e\right) = \dfrac{D_1}{P_0} + g = \dfrac{Rs.3}{Rs.30} + 0.07 = 0.1 + 0.07 = 0.17 = 17\%$

(ii)   Cost of Debentures (Kd) = I (1 - t) = 0.09 (1 - 0.4) = 0.054 or 5.4%

(2 Marks)

Computation of Weighted Average Cost of Capital (WACC using market value weights)

Source of capital	Market Value of capital (Rs.)	Weight	Cost of capital (%)	WACC (%)
9% Debentures	30,00,000	0.30	5.40	1.62
12% Preference Shares	10,00,000	0.10	12.00	1.20
Equity Share Capital (Rs.30 × 2,00,000 shares) WACC (%)	60,00,000	0.60	17.00	10.20
Total	**1,00,00,000**	**1.00**		**13.02**

(3 Marks)

Answer-2 (a) :

Calculation of Unabsorbed Overheads   **(Rs.)**

Manufacturing overheads actually spent   1,70,000

Less: Manufacturing overheads absorbed   1,50,000

Manufacturing overheads unabsorbed   20,000

(1 Mark)

If the unabsorbed overheads is due to abnormal reasons, the unabsorbed amount of Rs. 20,000 should be charged against Current Costing Profit and Loss A/c and it will reduce the current year profits to the extent of Rs. 20,000.

(1 Mark)

If the unabsorbed manufacturing overheads due to normal factors, the same should be adjusted to cost of goods sold, work-in-progress and stock of finished goods as follows:

(1 Mark)

Particulars	Percentage	Amount (Rs.)	Proportionate unabsorbed overhead (Rs.)	Total cost(Rs.)
Cost of goods sold	70%	3,36,000	14,000	3,50,000
Work-in-progress	1096	48,000	2,000	50,000
Stock of finished goods	2096	96,000	4,000	1,00,000
Total	**10096**	**4,80,000**	**20,000**	

(3 Marks)

The unabsorbed manufacturing overhead will be added to cost of goods sold, work-in-progress and stock of finished goods by applying supplementary overhead rates. The current profits will get reduced by Rs. 14,000 to the extent of the proportion added to cost of goods sold whereas the balance of Rs. 2,000 and Rs. 4,000 added to work-in-progress and stock of finished goods will be carried to the next accounting year.

(2 Marks)

Answer-2 (b) :

Current Ratio = $\dfrac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}}$ = 2 i.e. 2 : 1

(2 Marks)

S.No.	Situation	Improve/ Decline/ No Change	Reason
(i)	Payment of	Current Ratio	Rs.1 lakh. If payment of Current Liabilities = Rs.10,000 then,

	Current liability	will improve	CA = 1, 90,000 CL = 90,000. Current Ratio = $\dfrac{1,90,000}{90,000}$ = 2.11 : 1. When Current Ratio is 2:1 Payment of Current liability will reduce the same amount in the numerator and denominator. Hence, the ratio will improve.
(ii)	Purchase of Fixed Assets by cash	Current Ratio will decline	Since cash will be reduced, Current Asset will decrease and current ratio will fall.
(iii)	Cash collected from Customers	Current Ratio will not change	Cash will increase and Debtors will reduce. Hence No Change in Current Asset.
(iv)	Bills Receivable dishonoured	Current Ratio will not change	Bills Receivable will come down and debtors will increase. Hence no change in Current Assets.
(v)	Issue of New Shares	Current Ratio will improve	As Cash will increase, Current Assets will increase and current ratio will increase.

(6 Marks)

Answer-3 (a) :
(a)   Production Budget (in units)

	Product- K (units)	Product- H (units)
Expected sales	8,000	4,200
Add: Closing stock	1,000	2,100
Less: Opening stock	(800)	(1,600)
Units to be produced	8,200	4,700

(2 Marks)

(b) Material Purchase Budget

	Material-X (kg.)	Material-Y (kg.)	Material-Z (Ltr.)
Materials required:			
- Product-K	98,400	1,23,000	65,000
	(8,200 units ×12 kg.)	(8,200 units× 15 kg.)	(8,200 units x 8 ltr.)
- Product- H	70,500	28,200	65,800
	(4,700 units x 15 kg.)	(4,700 units x 6 kg.)	(4,700 units x 14 ltr.)

(2 Marks)

	Material-X (kg.)	Material-Y (kg.)	Material-Z (Ltr.)
Total	**1,68,900**	**1,51,200**	**1,31,400**
Add: Closing stock	30,000	18,000	7,500
Less: Opening stock	(25,000)	(30,000)	(14,000)
Quantity to be purchased	1,73,900	1,39,200	1,24,900
Rate	Rs.15 per kg.	Rs.16 per kg.	Rs.5 per ltr.
Purchase cost	Rs. 26,08,500	Rs. 22,27,200	Rs. 6,24,500

(2 Marks)

(c) Direct Labour Budget

	Unskilled (hours)	Skilled(hours)
For Product K	98,400	65,600
	(8,200 units × 12 hours)	(8,200 units × 8 hours)
For Product H	47,000	23,500
	(4,700 units × 10 hours)	(4,700 units × 5 hours)
Labour hours required	1,45,400	89,100
Rate	Rs. 40 per hour	Rs. 75 per hour
Wages to be paid	Rs. 58,16,000	Rs. 66,82,500

Answer-3 (b) :

(i)   Schedule of Changes in Working Capital:

Particulars	31st March		Working Capital	
	2009 Rs.	2010 Rs.	Increase Rs.	Decrease Rs.
(A) Current Assets				
Stock	9,60,000	17,00,000	7,40,000	
Debtors	12,00,000	15,96,000	3,96,000	
Prepaid Expenses	1,00,000	80,000		20,000
Cash and Bank	2,80,000	1,70,000		1,10,000
Total (A)	**25,40,000**	**35,46,000**		
(B) Current Liabilities				
Creditors	8,00,000	11,60,000		3,60,000
Outstanding Expenses	40,000	50,000		10,000
Provision for Taxation	2,00,000	2,40,000		40,000
Total (B)	10,40,000	14,50,000		
Working Capital (A) – (B)	15,00,000	20,96,000	11,36,000	5,40,000
Increase in WorkingCapital	5,96,000			5,96,000
Total	**20,96,000**	**20,96,000**	**11,36,000**	**11,36,000**

(ii) Funds flow from Operations for the year ended March 31, 2010

Adjusted Profit and Loss A/C

Particulars		Rs.	Particulars	Rs.
To General Reserve		66,000	By Balance b/d	5,00,000
To Depreciation:			By Funds from Operations	
			(Balancing figure)	21,26,000
On Land & Building	2,00,000			
On Plant &Machinery	5,60,000	7,60,000		
To Loss on Sale ofMachine		40,000		
To Premium onRedemption ofDebentures	80,000			
To ProposedDividend		7,20,000		
To Interim Dividend		2,40,000		
To Balance c/d		7,40,000		
		26,26,000		**26,26,000**

Working Notes:

(i)   Depreciation on Land and Building = Rs.30,00,000 – 28,00,000 = Rs.2,00,000

(ii)   Loss on Sale of Old Machine = Rs.2,90,000 (Cost) –1,50,000 (Cum. Dep.)
– 1,00,000 (Sale Value) = 40,000

(iii)   Depreciation on Plant and Machinery

Dr.	Rs.	Cr.	Rs.
To Balance b/d	36,00,000	By Bank a/c (sold)	1,00,000
To Bank a/c (Purchases)	6,00,000	By Profit & Loss a/c (Loss on Sales)	40,000
		By Depreciation(Balancing figure)	5,60,000

	By Balance c/d	35,00,000

	42,00,000		**42,00,000**

(2 Marks)

(iv) Premium on Redemption of Debentures

Amount of Debentures Redeemed = Rs. 20,00,000 - 16,00,000 = Rs.4,00,000

Premium = 20% of 4,00,000= Rs. 80,000

(1 Mark)

Answer-4 (a) :

(1)   Statement Showing Allocation of Joint Costs basing on Sales Value at Split-off Stage   (Rs.)

Product	Sales value at split-off stage	Proportion %	Joint costs allocation
Caustic soda	15,00,000 50	50	12,50,000
Chlorine	15,00,000	50	12,50,000
	30,00,000	**100**	**25,00,000**

(1 Mark)

(2)   Statement Showing Allocation of Joint Costs basing on Physical Measure

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Product	Quantity (Tones)	Proportion %	Joint cost allocation (Rs.)
Caustic soda	1,200	60	15,00,000
Chlorine	800	40	10,00,000
	30,00,000	**100**	**25,00,000**

(1 Mark)

(3)   Statement Showing Allocation of Joint Costs basing on Estimated Net Realizable Value

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Product	Estimated Net Saleable value	%	Joint cost allocation
Caustic soda	15,00,000	42.86	10,71,500
Chlorine	20,00,000	57.14	14,28,500
	35,00,000	**100**	**25,00,000**

(1 Mark)

(i)   Calculation of Estimated Net Realizable Value

Particulars	Caustic Soda	Chlorine
Expected production 1200 tones	1200 tonnes	500 tones
Selling price per tonne Rs. 1,250	Rs.1,250	Rs.5,000
Expected sales	Rs.15,00,000	Rs.25,00,000
Less: Further processing cost	Nil	Rs.5,00,000
Estimated net realizable value at split-off stage	Rs.15,00,000	Rs.20,00,000

(2 Marks)

(ii)   Calculation of Gross Margin Percentage of Caustic Soda and PVC under the above three methods

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Particulars	Sales value At split off Stage	Physical measure	Estimated Net realiseable value
Caustic soda			

Sales	15,00,000	15,00,000	15,00,000
Less : Joint Costs allocated	12,50,000	15,00,000	10,71,500
Gross margin (Rs.)	2,50,000	-	-
Gross margin (as % of sales)	16.67%	-	28.57%
PVC			
Sales (500 tonnes @ Rs.5,000)	25,00,000	25,00,000	25,00,000
Less : Joint cost allocated	12,50,000	10,00,000	14,28,500
Less : Further processing cost	5,00,000	5,00,000	5,00,000
Gross margin	7,50,000	10,00,000	5,71,500
Gross margin (as % of sales)	3%	40%	22.86%

(2 Marks)

(iii)   Incremental Revenue from Further Processing of Chlorine into PVC   Rs.

Incremental revenue	(500 tonnes x Rs.5,000) –	
	(800 tonnes x Rs.1,875)	10,00,000
Incremental cost of further processing into PVC		5,00,000
Incremental income from further processing		5,00,000

Suggestion – Since there is an incremental revenue is Rs.5,00,000 from further processing of chlorine into PVC, hence it is suggested to go for further process.

(1 Mark)

Answer-4 (b) :
(i)   Computation of Earnings per Share (EPS)

Plans	P (Rs.)	Q (Rs.)	R (Rs.)
Earnings before interest & tax (EBIT)	18,00,000	18,00,000	18,00,000
Less: Interest charges	—	(2,00,000)	) —
Earnings before tax (EBT)	18,00,000	16,00,000	18,00,000
Less : Tax @ 50%	(9,00,000)	(8,00,000)	(9,00,000)
Earnings after tax (EAT)	9,00,000	8,00,000	9,00,000
Less : Preference share dividend	—	—	(2,00,000)
Earnings available for equity shareholders	9,00,000	8,00,000	7,00,000
No. of equity shares	2,00,000	1,00,000	1,00,000
E.P.S	4.5	8	7

(4 Marks)

(ii)   Computation of Financial Break-even Points
Proposal 'P'   = 0
Proposal 'Q'   = Rs. 2,00,000 (Interest charges)
Proposal 'R'   = Earnings required for payment of preference share
dividend   i.e. Rs. 2,00,000÷ 0.5 (Tax Rate) = Rs. 4,00,000

(1 Mark)

(iii)   Computation of Indifference Point between the Proposals
Combination of Proposals
(a)   Indifference point where EBIT of proposal "P" and proposal 'Q' is equal

$$\frac{EBIT\ (1-0.5)}{2,00,000\ shares} = \frac{(EBIT-Rs.2,00,000)(1-0.5)}{1,00,000\ shares}$$

0.5 EBIT   = EBIT – Rs. 2,00,000
EBIT   = Rs. 4,00,000

(b)   Indifference point where EBIT of proposal 'P' and proposal 'R' is equal:

$$\frac{EBIT\ (1-0.50)}{2,00,000\ shares} = \frac{EBIT\ (1-0.50) - Rs.2,00,000}{1,00,000\ shares}$$

$$\frac{0.5\ EBIT}{2,00,000\ shares} = \frac{0.5\ EBIT - Rs.2,00,000}{1,00,000\ shares}$$

$$0.25 \text{ EBIT} = 0.5 \text{ EBIT} - \text{Rs. } 2,00,000$$

$$\text{EBIT} = \frac{\text{Rs. }2,00,000}{0.25} = \text{Rs.}8,00,000$$

(c)   Indifference point where EBIT of proposal 'Q' and proposal 'R' are equal

$$\frac{\left(\text{EBIT - Rs.}2,00,000\right)\left(1-0.5\right)}{1,00,000 \text{ shares}} = \frac{\text{EBIT }\left(1-0.5\right) - Rs.2,00,000}{1,00,000 \text{ shares}}$$

$$0.5 \text{ EBIT} - \text{Rs.}1,00,000 = 0.5 \text{ EBIT} - \text{Rs.}2,00,000$$

There is no indifference point between proposal 'Q' and proposal 'R'

Analysis: It can be seen that financial proposal 'Q' dominates proposal 'R', since the financial break-even-point of the former is only Rs. 2,00,000 but in case of latter, it is Rs. 4,00,000.

(3 Marks)

Answer-5 (a) :
Difference between Cost Control and Cost Reduction

Cost Control	Cost Reduction
1. Cost control aims at maintainingthe costs in accordance with theestablished standards.	1. Cost reduction is concerned withreducing costs. It challenges allstandards and endeavours to betterthem continuously
2. Cost control seeks to attainlowest possible cost underexisting conditions.	2. Cost reduction recognises no conditionas permanent, since a change will resultin lower cost.
3. In case of Cost Control,emphasis is on past and present	3. In case of cost reduction it is onpresent and future.
4. Cost Control is a preventivefunction	4. Cost reduction is a corrective function. It operates even when an efficient costcontrol system exists.
5. Cost control ends when targetsare achieved	5. Cost reduction has no visible end.

(4 Marks)

Answer-5 (b) :
Let, the percentage of factory overheads on direct labour is 'x' and the percentage of office overheads on factory cost is 'y', then the total cost of product A and product B will be asfollows:

	Product A (Rs.)	Product B (Rs.)
Direct Materials	19,000	15,000
Direct labour	15,000	25,000
Prime Cost	34,000	40,000
Factory overheads (Direct labour X x)	150 x	250 x
Factory cost (i)	34,000 + 150 x	40,000 + 250 x
Office overheads (Factory cost * y) (ii)	340 y + 1.5 x y	400 y + 2.5 x y
Total Cost [(i) + (ii)]	34,000 + 150 x + 340 y + 1.5 x y	40,000 + 250 x +400 y + 2.5 x y

(2 Marks)

Total cost on the basis of sales is:

	Product A (Rs.)	Product B (Rs.)
Sales	60,000	80,000
Less: Profit		
Product A – 25% on cost or 20% on Sales	12,000	
Product B – 25% on sales		20,000
Total Cost	**48,000**	**60,000**

(2 Marks)

Thus,

Total Cost of A is	$34{,}000 + 150x + 340y + 1.5\,xy$	$= 48{,}000$	
	Or, $150x + 340y + 1.5\,xy = 14{,}000$…………………….		(i)
Total Cost of B is	$40{,}000 + 250x + 400y + 2.5\,xy$	$= 60{,}000$	
	Or, $250x + 400y + 2.5\,xy$	$= 20{,}000$……………………	(ii)

Equation (ii) multiplied by 0.6 and after deducting from equation (i), we get

$$150x + \ 340y \ + 1.5xy \ = \ 14{,}000 \text{………………….} \quad (i)$$
$$\underline{150X \pm 240Y \pm 1.5xy} \ = \ \underline{12{,}000} \text{…………………} \quad (ii)$$
$$100y \qquad = \ 2{,}000$$
$$\text{Or, } y \ = \ 20$$

Putting value of y in equation (i), we get

$$150x + 340 \times 20 + 1.5x \times 20 \ = 14{,}000$$
$$\text{Or, } 150x + 30x \ = 14{,}000 - 6{,}800$$
$$\text{Or, } 180x \ = 7{,}200$$
$$\text{Or, } x \ = 40$$

Hence, (i)   the factory overheads on direct labour = 40% and
(ii)   the office overheads on factory cost   = 20%.

(2 Marks)

Answer-5 (c) :

Financial Instruments in the International Market

Some of the various financial instruments dealt with in the international market are:

(a)   Euro Bonds
(b)   Foreign Bonds
(c)   Fully Hedged Bonds
(d)   Medium Term Notes
(e)   Floating Rate Notes
(f)   External Commercial Borrowings
(g)   Foreign Currency Futures
(h)   Foreign Currency Option
(i)   Euro Commercial Papers.

(6 Marks)

Answer-6 (a) :

Arnav Construction Ltd. Contract A/c
(November 1, 2012 to Oct. 31, 2013)

Particulars	Amount (Rs.)	Amount (Rs.)	Particulars	Amount (Rs.)	Amount (Rs.)
To Materials issued		6,75,000	By Plant returned to store on 31/03/13 at cost 75,000		
To Labour paid	4,50,000		Less: Depreciation for 5 months @ 33.33% (10,417)		64,583
Less: Prepaid wages	(25,000)	4,25,000	By W-I-P:		
To Plant purchased &issued		3,75,000	Work certified	20,00,000	
To Expenses paid	2,00,000		Work un-certified	75,000	20,75,000
Add: Outstanding exp.	50,000	2,50,000	By Plant at site (Rs. 3,75,000 – Rs. 75,000) 3,00,000		
			Less: Depreciation @33.33% 1,00,000		2,00,000
To Notional profit c/d		6,89,583	By Material at site		75,000
		24,14,583			**24,14,583**
To Costing P & L A/c. (Working Note-1)		1,48,580	By Notional Profit b/d		6,89,583
To Work-in –progress (Profit transferred to reserve)		5,41,003			
		6,89,583			**6,89,583**

Arnav Construction Ltd. Contract A/c (November 1, 2012 to March 31, 2014)
(For computing estimated profit)

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
To Material issued		By Material at site	37,500
(Rs. 6,75,000 + Rs. 12,37,500)	19,12,500	By Plant returned to stores on 31/03/13	64,583
To Labour (Paid & Outstanding)			
(Rs.4,25,000 + Rs.5,87,500 +Rs.2,500)	10,15,000		
To Plant purchased	3,75,000	By Plant returned to stores on31/03/14	
To Expenses(2,50,000 + 3,25,000)	5,75,000	WDV on 31/10/2013 2,00,000	
		Less: Depreciation for	
		5 months @ 33.33% (27,778)	1,72,222
To Estimated profit	3,34,305	By Contractee A/c	39,37,500
	42,11,805		42,11,805

(3 Marks)

Working Note:
Profit to be taken to Costing Profit & Loss A/c on prudent basis:

$$\text{Estimated profit} \times \frac{\text{Cash received}}{\text{Work certified}} \times \frac{\text{Work certified}}{\text{Total Contract}}$$

$$Rs.3,34,305 \times \frac{Rs.17,50,000}{Rs.20,00,000} \times \frac{Rs.20,00,000}{Rs.39,37,500} = Rs.1,48,580$$

(1 Mark)

Answer-6 (b) :

(1)   Calculation of Saving in Bad Debt Losses   (Rs.)

Current bad debts	(40,000X35X3/100)	42,000
Proposed bad debts	(39,000X35X 1/100)	13,650
Saving in bad debts		28,350

(1.5 Marks)

(2)   Calculation of Saving in Investment in Receivables   (Rs.)

Current investment in receivables	(40,000 X 35 X 60/360)	2,33,333
Proposed investment in receivables	(39,000 X 35 X 45/360)	1,70,625
Saving in investment in receivables		62,708

(1.5 Marks)

(3) Calculation of Total Saving   (Rs.)

Saving in bad debt		28,350
Saving in investment in receivables	(62,708 X 20/100)	12,542
Total saving on adoption of new credit policy		40,892

(1.5 Marks)

Increase in Collection Charges   (Rs.)

Current collection charges	15,000
Proposed collection charges	25,000
Increase in collection charges	10,000

(1.5 Marks)

Reduction in profit due to loss of sales	= 1000 units X (Rs. 35 - Rs. 28)	= Rs. 7,000
Incremental Cost	= 10,000 + 7,000	= Rs. 17,000
Incremental profit from adoption of newcredit policy	= 40,892 - 17,000	= Rs. 23,892

Analysis - Since the existing profit will increase by Rs. 23,892 by adoption of new the new credit policy. Hence, the scheme is suggested to adopt.

(2 Marks)

Answer-7 (a) :

Annual requirement of raw material in kg. (A) $= \dfrac{1,00,000 \text{ units}}{2.5 \text{ units per kg}} = 40,000$ kg.

Ordering Cost (Handling & freight cost) (O) = Rs. 360 + Rs. 390 = Rs. 750

Carrying cost per unit per annum i.e. inventory carrying cost + working capital cost (c × i)
$$= (Rs. 0.5 \times 12 \text{ months}) + Rs. 9$$
$$= Rs. 15 \text{ per kg.}$$

(2 Marks)

(i)   E.O.Q. = $\quad = \sqrt{\dfrac{2 \times 40,000 \text{ kgs. } \times Rs.750}{Rs.15}} = 2,000$ kg.

(1 Mark)

(ii)   Frequency of orders for procurement:

Annual consumption (A)   = 40,000 kg.

Quantity per order (EOQ)   = 2,000 kg.

No. of orders per annum $\left(\dfrac{A}{EOQ}\right) \quad = \dfrac{40,000 \text{ kg}}{2,000 \text{ kg.}}$ = 20 times

Frequency of placing orders (in months) $= \dfrac{12 \text{ months}}{20 \text{ orders}}$ = 0.6 months

Or, (in days) $\qquad\qquad\qquad = \dfrac{365 \text{ days}}{20 \text{ orders}}$ = 18 days (approx.)

(1 Mark)

(iii)   Percentage of discount in the price of raw materials to be negotiated:

	Quarterly order	EOQ
Size of the order	10,000 kg.	2,000 kg.
No. of orders	4	20
Cost of placing orders	Rs.3,000	Rs.15,000
	(4 order × Rs. 750)	(20 orders × Rs. 750)
Inventory carrying cost	Rs.75,000	Rs.15,000
	(10,000 kg. × ½ ×Rs.15)	(2,000 kg. × ½ × Rs. 15)
Total Cost	**Rs.78,000**	**Rs.30,000**

When order is placed on quarterly basis the ordering cost and carrying cost increased by Rs. 48,000 (Rs.78,000 - Rs.30,000). This increase in total cost should be compensated byreduction in purchase price per kg. to make quarterly order placement rational.

Reduction per kg. in the purchase price of raw material $= \dfrac{\text{Increase in total cost}}{\text{Annual requirement}}$

$$= \dfrac{Rs.48,000}{40,000 \text{ units}} = Rs.1.2 \text{ per kg.}$$

Discount in the price of raw material to be negotiated $= \dfrac{Rs.1.20}{Rs.60} = 2\%$

(2 Marks)

Answer-7 (b) :

Factors to be taken into consideration while determining the requirement of working capital:

(i) Production Policies	(ii) Nature of the business
(iii) Credit policy	(iv) Inventory policy
(v) Abnormal factors	(vi) Market conditions
(vii) Conditions of supply	(viii) Business cycle

(ix) Growth and expansion   (x) Level of taxes
(xi) Dividend policy   (xii) Price level changes
(xiii) Operating efficiency.

<div align="right">(4 Marks)</div>

Answer-7 (c) :

Budgeted Production 30,000 hours ÷ 6 hours per unit = 5,000 units

Budgeted Fixed Overhead Rate   = Rs. 4,50,000 ÷ 5,000 units = Rs. 90 per unit Or

                                            = Rs. 4,50,000 ÷ 30,000 hours = Rs. 15 per hour.

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

                                            = (4,800 units × 10 kg. × Rs.10) - Rs. 5,25,000

                                            = Rs. 4.80,000 – Rs. 5,25,000

                                            = Rs. 45,000 (A)

(ii)   Labour Cost Variance   = (Std. Hours × Std. Rate) – (Actual Hours × Actual rate)

                                            = (4,800 units × 6 hours × Rs. 5.50) – Rs.1,55,000

                                            = Rs. 1,58,400 – Rs. 1,55,000

                                            = Rs. 3,400 (F)

(iii)   Fixed Overhead Cost Variance   = (Budgeted Rate × Actual Qty) – Actual Overhead

                                            = (Rs. 90 x 4,800 units) – Rs. 4,70,000

                                            = Rs. 38,000 (A)

        OR   = (Budgeted Rate × Std. Hours) – Actual Overhead

                                            = (Rs. 15 x 4,800 units × 6 hours) – Rs. 4,70,000

                                            = Rs. 38,000 (A)

(iv)   Variable Overhead Cost Variance   = (Std. Rate × Std. Hours) – Actual Overhead

                                            = (4,800 units × 6 hours × Rs. 10) - Rs. 2,93,000

                                            = Rs. 2,88,00 - Rs. 2,93,000

                                            = Rs. 5,000 (A)

<div align="right">(6 Marks)</div>