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Solved Ans. Costing & F.M. Ipcc_Nov.10

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C.A. CPT, PCC, IPCC & FINAL

*Solved Ans Prepared by : C.A Arvind Kumar Jain
and Team Members*

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Contact us

Head Office: - 2nd Floor, Dey Complex, Outer Circle Road, Near - IIFT, Bistupur,
Jamshedpur - 831001. ☎: 0657-2317323, 📞: 09431187218

Branch Office : 1st Floor, Jaiswal Complex, Near - Mansorowar Hotel, Sakchi- 831001
☎ : 0657- 2940016 📞 : 09031765469

Roll No.....

Total No. of Questions - 7

Time Allowed - 3 Hours

Total No. of Printed Pages - 8

Maximum Marks -100

Costing & F.M.

Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate has not opted for Hindi medium, his answers in Hindi will not be valued.

Question No. **1** is compulsory.

Attempt any **five** questions from the remaining **six** questions.

Working notes should form part of the answer.

Qn. 1. Answer the following :

[4 x 5 = 20 marks]

(a) Compute the sales variances (total, price and volume) from the following figures :

Product	Budgeted quantity	Budgeted Price per Unit (Rs.)	Actual quantity	Actual Price per unit (Rs.)
P	4000	25	4800	30
Q	3000	50	2800	45
R	2000	75	2400	70
S	1000	100	800	105

(b) ABC Limited has received an offer of quantity discounts on its order of materials as under :

Price per tonne Rs.	Tonnes Nos.
4,800	Less than 50
4,680	50 and less than 100
4,560	100 and less than 200
4,440	200 and less than 300
4,320	300 and above

The annual requirement for the material is 500 tonnes. The ordering cost per order is Rs. 6,250 and the stock holding cost is estimated at 25% of the material cost per annum.

Required :

- Compute the most economical purchase level,
- Compute E.O.Q. if there are no quantity discounts and the price per tonne is Rs. 5,250.

(c) MNP Limited has made plans for the next year 2010-11. It is estimated that the company will employ total assets of Rs. 25,00,000; 30% of assets being financed by debt at an interest cost of 9% p.a. The direct costs for the year are estimated at Rs.15,00,000 and all other operating expenses are estimated at Rs. 2,40,000. The sales revenue are estimated at Rs. 22,50,000. Tax rate is assumed to be 40%.

Required to calculate :

- Net profit margin
- Return on Assets
- Asset turnover
- Return on equity

(d) PQR Ltd. has the following capital structure on October 31, 2010 :

	Rs.
Equity Share Capital (2,00,000 Shares of Rs. 10 each)	20,00,000
Reserves & Surplus	20,00,000
12% Preference Shares	10,00,000
9% Debentures	<u>30,00,000</u>
	80,00,000

The market price of equity share is Rs. 30. It is expected that the company will pay next year a dividend of Rs. 3 per share, which will grow at 7% forever. Assume 40% income tax rate.

You are required to compute weighted average cost of capital using market value weights.

Qn 2 (a) PQR Construction Ltd. commenced a contract on April 1, 2009. The total contract was for Rs. 27,12,500. It was decided to estimate the total profit and to take to the credit of P/L A/c the proportion of estimated profit on cash basis which work completed bear to the total contract. Actual expenditure in 2009-10 and estimated expenditure in 2010-11 are given below : **[8 marks]**

	2009-10 Actuals (Rs.)	2010-11 Estimated (Rs.)
Materials issued	4,56,000	8,14,000
Labour : Paid	3,05,000	3,80,000
: Outstanding at end	24,000	37,500
Plant purchased	2,25,000	-
Expenses : Paid	1,00,000	1,75,000
: Outstanding at the end	-	25,000
: Prepaid at the end	22,500	-
Plant returned to stores (at historical cost)	75,000	1,50,000 (on Dec. 31,2010)
Material at site	30,000	75,000
Work-in-progress certified	12,75,000	Full
Work-in-progress uncertified	40,000	-
Cash received	10,00,000	Full

The plant is subject to annual depreciation @ 20% of WDV cost. The contract is likely to be completed on December 31, 2010.

Required :

- Prepare the Contract A/c for the year 2009-10.
- Estimate the profit on the contract for the year 2009-10 on prudent basis which has to be credited to P/L A/c.

(b) RST Limited is considering relaxing its present credit policy and is in the process of evaluating two proposed policies. Currently, the firm has annual credit sales of Rs. 225 lakhs and accounts receivable turnover ratio of 5 times a year. The current level of loss due to bad debts is Rs. 7,50,000. The firm is required to give a return of 20% on the investment in new accounts receivables. The company's variable costs are 60% of the selling price. Given the following information, which is better option ? **[8 marks]**

(Amount in Rs. Lakh)

	Present Policy	Policy Option I	Policy Option II
Annual credit sales (Rs.)	225	275	350
Accounts receivable turnover ratio	5	4	3
Bad debt losses (Rs.)	7.5	22.5	47.5

Qn 3 (a) Following information is available regarding Process A for the month October 2010: **[8 marks]**

Production Record :

- Opening work-in-progress
(Material : 100% complete, 25% complete for labour & overheads)
- Units Introduced
- Units Completed Units in-process on 31.10.2010
(Material : 100% complete, 50% complete for labour & overheads)

Cost Record :

Opening Work-in-Progress :

Material
Labour
Overheads

Cost incurred during the month :

Material
Labour
Overheads

Assume that FIFO method is used for W.I.P. inventory valuation.

Required :

- (i) Statement of Equivalent Production
- (ii) Statement showing Cost for each element
- (iii) Statement of apportionment of Cost
- (iv) Process A Account.

(b) (i) Calculate the degree of operating leverage, degree of financial leverage and the degree of combined leverage for following firms and interpret the results : **[4 marks]**

	P	Q	R
Output (Units)	2,50,000	1,25,000	7,50,000
Fixed Cost (Rs.)	5,00,000	2,50,000	10,00,000
Unit Variable cost (Rs.)	5	2	7.50
Unit Selling price (Rs.)	7.50	7	10.0
Interest Expense (Rs.)	75,000	25,000	--

(ii) Discuss the liquidity vs. profitability issue in management of working capital. **[4 marks]**

Qn 4. (a) Balance Sheets of ABC Limited as on March 31, 2009 and March 31, 2010 are as under : **[8 marks]**

Liabilities	31.3.2009 (Rs.)	31.3.2010 (Rs.)	Assets	31.3.2009 (Rs.)	31.3.2010 (Rs.)
Share Capital	40,00,000	40,00,000	Land and Building	30,00,000	28,00,000
General Reserve	8,00,000	9,00,000	Plant and Machinery	36,00,000	35,00,000
Profit and Loss A/c	5,00,000	7,20,000	Investments (long- term)	8,00,000	7,44,000
10% debentures	20,00,000	16,00,000	Stock	9,60,000	17,00,000
Bank Loan (long term)	10,00,000	12,00,000	Debtors	12,00,000	15,96,000
Creditors	8,00,000	11,60,000	Prepaid Expenses	1,00,000	80,000
Outstanding Expenses	40,000	50,000	Cash and Bank	2,80,000	1,70,000
Proposed dividend	6,00,000	7,20,000			
Provision for taxation	2,00,000	2,40,000			
	99,40,000	1,05,90,000		99,40,000	1,05,90,000

Additional Information :

- (i) New machinery for Rs. 6,00,000 was purchased but an old machinery costing Rs. 2,90,000 was sold for Rs. 1,00,000 and accumulated depreciation thereon was Rs. 1,50,000.
- (ii) 10% debentures were redeemed at 20% premium.
- (iii) Investments (long term) were sold for Rs. 90,000 and its profit was : transferred to general reserve.
- (iv) Income-tax paid during the year 2009-10 was Rs. 1,60,000.
- (v) An interim dividend of Rs.2,40,000 has been paid during the year 2009-10.
- (vi) Assume the provision for taxation as current liability and proposed dividend as non-current liability.
- (vii) Investments (long term) are non-trade investments.

Required:

- i) Schedule of changes in working capital.
- ii) Funds flow from operations for the year ended March 31, 2010.

(b) MNP Ltd sold 2,75,000 units of its product at Rs. 37.50 per unit. Variable costs are Rs.17.50 per unit (manufacturing costs of Rs. 14 and selling cost of Rs. 3.50 per unit). Fixed costs are incurred uniformly throughout the

year and amount to Rs.35,00,000 (including depreciation of Rs. 15,00,000). There are no beginning or ending inventories.

Required :

- Estimate breakeven sales level quantity and cash breakeven sales level quantity.
- Estimate the P/V ratio.
- Estimate the number of units that must be sold to earn an income (EBIT) of Rs. 2,50,000.
- Estimate the sales level to achieve an after-tax income (PAT) of Rs. 2,50,000. Assume 40% corporate Income Tax rate.

[8 marks]

Qn 5. (a) A manufacturing company has disclosed a net loss of Rs. 8,75,000 as per their cost accounting records for the year ended March 31, 2010. However, their financial accounting records disclosed a net loss of Rs. 7,91,250 for the same period. A scrutiny of the data of both the sets of books of accounts revealed the following information :

[8 marks]

	Rs.
(i) Factory overheads over-absorbed	47,500
(ii) Administration overheads under-absorbed	32,750
(iii) Depreciation charged in Financial Accounts	2,25,000
(iv) Depreciation charged in Cost Accounts	2,42,250
(v) Interest on investments not included in Cost Accounts	62,750
(vi) Income Tax provided in Financial Accounts	7,250
(vii) Transfer fees (credit in Financial Accounts)	12,500
(viii) Preliminary expenses written off	27,500
(ix) Under-valuation of opening stock in Cost Accounts	6,250
(x) Under valuation of closing stock in Cost Accounts	17,500
Required :	
Prepare a Memorandum Reconciliation A/c.	

(b) Distinguish between the following :

[2 x 4 = 8 marks]

- Profit maximisation vs Wealth maximisation objective of the firm.
- Global Depository Receipts and American Depository Receipts.

Qn 6 (a) A company has to make a choice between two machines X and Y. The two machines are designed differently, but have identical capacity and do exactly the same job. Machine 'X' cost Rs. 5,50,000 and will last for three years. It costs Rs. 1,25,000 per year to run. Machine 'Y' is an economy model costing Rs. 4,00,000, but will last for two years and costs Rs. 1,50,000 per year to run. These are real cash flows. The costs are forecasted in Rupees of constant purchasing power. Opportunity cost of capital is 12%. Ignore Taxes. Which machine company should buy?

	t = 1	t = 2	t = 3
PVIF _{0.12, t}	0.8929	0.7972	0.7118
PVIFA _{0.12, 2}	= 1.6901		
PVIFA _{0.12, 3}	= 2.4019		

[8 marks]

(b) Write short notes on the following :

[2 x 4 = 8 marks]

- Essential factors for installing a Cost Accounting system,
- Treatment of under-absorbed and over-absorbed overheads in Cost Accounting.

Qn 7. Answer any **four** of the following :

[4 x 4 = 16 marks]

- What are the methods of re-apportionment of service department expenses over the production departments? Discuss.
- How apportionment of joint costs up to the point of separation amongst the joint products using market value at the point of separation and net realizable value method is done ? Discuss.
- Discuss the estimation of working capital need based on operating cycle process.
- Discuss financial break-even and EBIT-EPS indifference analysis.
- Discuss the three different methods of calculating labour turnover.

ANSWER

Ans. 1 (a) Sales Variances

W.N. (1)	BP x BQ	BP x AQ sold	AP x AQ sold
P	25/- x 4000	25/- x 4800	30/- x 4800
Q	50/- x 3000	50/- x 2800	45/- x 2800
R	75/- x 2000	75/- x 2400	70/- x 2400
S	100/- x 1000	100/- x 800	105/- x 800
	<u>500000/-</u>	<u>520000/-</u>	<u>522000/-</u>

Where

BP = Budgeted selling price per unit

AP = Actual selling price per unit

BQ = Budgeted quantity sold

AQ sold = Actual quantity sold

Solution :

$$\begin{aligned} \text{Sales value variance} &= (\text{AP} \times \text{AQ sold}) - (\text{BP} \times \text{BQ}) \\ &= 522000/- - 500000/- = 22000/- \text{ (F)} \\ &\quad \text{W.N.1} \quad \text{W.N. (1)} \end{aligned}$$

$$\begin{aligned} \text{Sales price variance} &= (\text{AP} \times \text{AQ sold}) - (\text{BP} \times \text{AQ sold}) \\ &= 522000/- - 520000/- = 2000 /- \text{ (F)} \\ &\quad \text{W.N. (1)} \quad \text{W.N. (1)} \end{aligned}$$

$$\begin{aligned} \text{Sales volume variance} &= (\text{BP} \times \text{AQ sold}) - (\text{BP} \times \text{BQ}) \\ &= 520000 - 500000 = 20000 \text{ (F)} \\ &\quad \text{W.N.(1)} \quad \text{W.N. (1)} \end{aligned}$$

Ans. 1 (b) (i) The formula of EOQ is not applicable in this part because purchase price has been changed according to change in order size.

In this question exact order size is not given at different prices, so we may assume order sizes of 20 tonnes, 50 tonnes, 100 tonnes, 200 tonnes & 300 tonnes.

Trial and Error Method

Annual consumption (in tones)	Order Size	Total ordering Cost $\left(\frac{A \times B}{\text{Order size}} \right)$ (c) (Rs.)	Total Carrying Cost $\left(\frac{\text{Size} \times c}{2} \right)$ (d) (Rs.)	Material Cost (e) (Rs.)	Total Cost $F = (c + d + e)$ (Rs.)
(a)	(b)				
500	20	$\frac{156250}{20}$ $\left(\frac{500 \times 6250}{20} \right)$	$\frac{12000}{2}$ $\left(\frac{20 \times 4800 \times 25\%}{2} \right)$	24,00,000 (4800 x 500)	25,68,250
500	50	$\frac{62500}{50}$ $\left(\frac{500 \times 6250}{50} \right)$	$\frac{29250}{2}$ $\left(\frac{50 \times 4680 \times 25\%}{2} \right)$	23,40,000 (4680 x 500)	24,31,750
500	100	$\frac{31250}{100}$ $\left(\frac{500 \times 6250}{100} \right)$	$\frac{57000}{2}$ $\left(\frac{100 \times 4560 \times 25\%}{2} \right)$	22,80,000 (4560 x 500)	23,68,250
500	200	$\frac{15625}{200}$ $\left(\frac{500 \times 6250}{200} \right)$	$\frac{111000}{2}$ $\left(\frac{200 \times 4440 \times 25\%}{2} \right)$	22,20,000 (4440 x 500)	23,46,625
		10417	162000	21,60,000	23,32,417

500	300	$\left(\frac{500 \times 6250}{300} \right)$	$\left(\frac{300 \times 4320 \times 25\%}{2} \right)$	(4320×500)	
-----	-----	--	--	---------------------	--

Most Economical order size is 300 units because at this level, the total is minimum (Rs.23,32,417)

Note : - A = Annual Consumption

B = Ordering cost per order

C = Carrying cost per unit per annum

Ans. 1 (b) (ii)

$$\begin{aligned}
 \text{EOQ} &= \sqrt{\frac{2 \times A \times B}{C}} \\
 &= \sqrt{\frac{2 \times 500 \times 6250}{(5250 \times 25\%)}} = \sqrt{\frac{6250000}{1312.50}} = 69 \text{ tonnes}
 \end{aligned}$$

Ans. 1 (c)

<u>Income Statement</u>	
Sales Revenue	2250000
Less : Direct Cost	<u>1500000</u>
Contribution	750000
Less : Other operating expenses	<u>240000</u>
EBDIT	510000
Less : Interest on 9% Debt [2500000 x 30% x 9%]	<u>67500</u>
EBDT	442500
Less : Depreciation	<u>Nil</u>
EBT	442500
Less : Taxes @ 40%	<u>177000</u>
EAT	<u>265500</u>

$$\begin{aligned}
 \text{(i) Net Profit Margin} &= \frac{\text{Net Profit after tax}}{\text{Sales revenue}} \times 100 \\
 &= \frac{\text{Rs. 265500}}{\text{Rs. 2250000}} \times 100 = 11.80 \%
 \end{aligned}$$

$$\begin{aligned}
 \text{(ii) Return on Assets} &= \frac{\text{Profit after tax but before interest}}{\text{Capital Employed}} \times 100 \\
 &= \frac{(265500 + 67500)}{25,00,000} \times 100 \\
 &= 13.32 \%
 \end{aligned}$$

$$\begin{aligned}
 \text{(iii) Assets Turnover} &= \frac{\text{Turnover}}{\text{Total Assets}} \\
 &= \frac{2250000}{2500000}
 \end{aligned}$$

$$= 0.90 \text{ times}$$

$$\begin{aligned} \text{(iv) Return on Equity} &= \frac{\text{Profit after tax}}{\text{Equity}} \times 100 \\ &= \frac{265500}{2500000 \times 70\%} \times 100 = 15.17\% \end{aligned}$$

Ans. 1 (d) Weighted overage cost of capital

$$\begin{aligned} &= \left(K_d \times \frac{D}{D + E} \right) + \left(K_e \times \frac{E}{D + E} \right) \\ &= \left(5.4 \times \frac{30,00,000}{30,00,000 + 60,00,000} \right) + \left(17.7 \times \frac{60,00,000}{30,00,000 + 60,00,000} \right) \\ &= 1.8 + 11.8 = 13.60\% \end{aligned}$$

Where

$$\begin{aligned} K_d &= \text{Cost of Debt} = \text{Intt. rate} (1 - \text{tax rate}) \\ &= 9\% \times (1 - 0.40) \\ &= 5.4\% \end{aligned}$$

$$\begin{aligned} K_e &= \text{Cost of equity} = \frac{D_1}{p} + g \\ &= \frac{(3 \times 1.07)}{30} + .07 = 17.7\% \end{aligned}$$

Here

D_1 = Dividend at the end of year 1

g = growth rate

p = market price per share.

D = Value of Debt = 30,00,000/-

E = Market value of Equity = No. of Equity Shares $\times$ Market price per share
 $= 200000 \text{ shares} \times 30/- \text{ each}$
 $= 6000000 \text{ /-}$

Ans. 2 (a) For the purpose of profit to be taken to be P & L a/c, work certified is to be considered but only that proportion of work certified is to be taken which related to cash received. Here the formula is –

$$\text{Estimated profit} \times \frac{\text{Cash received}}{\text{Contract price}}$$

Contract a/c from 1.4.2009 to 31.3.2010

Expenditure	Amount	Incomes	Amount
To Material issued	456000	By <u>Balance c/d</u>	
To <u>Labour</u>		Material at site	30000
Paid 305000		<u>Work in progress</u>	
Add : o/s <u>24000</u>	329000	Work certified	1275000
To Depreciation on plant	45000	Word uncertified	40000
225000 $\times$ 20%			
To <u>Expenses</u>			
Paid 100000			
Less : Prepaid <u>22500</u>	77500		
To Notional profit	<u>437500</u>		
	<u>1345000</u>		<u>1345000</u>

To P & L a/c [Refer solution (ii)]	159263	By National profit	437500
To Work in progress a/c (Reserve)	<u>278237</u>		
	437500		<u>437500</u>

W.N. (1)
Calculation of Estimated Profit

Particulars	Cost of date	Cost to be incurred
Materials	426000 (456000 – 30000)	769000 (30000 + 814000 – 75000)
Labour	329000 (305000 + 24000)	393500 (380000 – 24000 + 37500)
Depreciation	45000	18000 9 (150000 x 0.80 x 20% x ---) 12
Expenses	77500 (100000 – 22500)	222500 (175000+22500+25000)
	<u>877500</u>	<u>1403000</u>

Estimated Profit =	Contract price	Rs. 2712500
	Less : Cost incurred till date	877500
	Less : Cost to be incurred	<u>1403000</u>
		<u>432000</u>

(ii) Amount to be credited to P & L a/c = Estimated Profit x $\frac{\text{Cash received}}{\text{Contract price}}$

$$= 432000 \times \frac{1000000}{2712500}$$

$$= 159263 \text{ /-}$$

Ans. 2 (b)
**RST Ltd.
Evaluation of credit policies**
(Rs. in lakhs)

Particulars	Present Policy	Policy I	Policy II
Annual credit sales	225	275	350
Accounts receivable to ratio	5 times	4 times	3 times
Average collection period	2.4 months	3 months	4 months
Average level of accounts receivable	45	68.75	116.67
Marginal increase in investment in receivable less profit margin	--	14.25	43.00
Marginal increase in sales	--	50	125
Profit on marginal increase in sales (40%)	--	20	50
Marginal increase in Bad – debts	--	15	40
Profit on marginal inc. in sales less marginal bad-debts loss		<u>5</u>	<u>10</u>
Required return on marginal investment @ 20%		<u>2.85</u>	<u>8.6</u>
Surplus		<u>2.15</u>	<u>1.4</u>

Conclusion : Policy I is better.

Ans. 3 (a) (i)

Statement of Equivalent Production
(FIFO method)

Particulars	Input units	Particulars	Output units	Material		Labour		OH	
				% completion	Equivalent Units	% completion	Eq units	% Comp.	Eq. Units
Op. WIP Units introduced	40000 180000 ----- 220000	Op. WIP Completed Completed WIP	40000 110000 70000 220000	-- 100% 100%	-- 110000 70000 180000	75% 100% 50%	30000 110000 35000 175000	75% 100% 50%	30000 110000 35000 175000

(ii)

Statement showing cost for each element

Particulars	Materials	Labour	OH
Cost incurred during the month	660000	555000	925000
Equivalents units	180000	175000	175000
Cost per equivalent units (rs.)	3.66666	3.171429	5.2857

(iii)

Statement of apportionment of cost

Value of output :

Cost of Opening WIP

Previous month cost 1,70,000

Current month cost

Labour (30,000 x 3.171429)

OH (30,000 x 5.2857) 2,53,714 4,23,714

Cost of units freshly, introduced, completed & transferred

(1,10,000 x 12.123729) 13,33,610

17,57,324

Value of WIP

Material (70,000 x 3.6666)

Labour (35,000 x 3.171429)

OH (35,000 x 5.2857) 5,52,676

23,10,000

(iv)

Process A A/c

Particulars	Units	Amount	Particulars	Units	Amount
To opening WIP	40000	170000	By Completed units	150000	1757324
To Material	180000	660000	By WIP	70000	552676
To Labour		555000			
To OH		925000			
	<u>220000</u>	<u>2310000</u>		<u>220000</u>	<u>2310000</u>

Ans. 3 (b) (i) Calculation of degree of operating leverage :

$$\text{Operating leverage} = \frac{N(P - V)}{N(P - V) - F}$$

Where,

N = Number of units

P = Selling price per unit

V = Variable cost per unit

F = Fixed Cost

$$\text{For } P = \frac{2,50,000 (7.50 - 5.00)}{2,50,000 (7.50 - 5.00) - 5,00,000}$$

$$= \frac{6,25,000}{1,25,000} = 5$$

$$Q = \frac{1,25,000 (7.00 - 2.00)}{1,25,000 (7.00 - 2.00) - 2,50,000}$$

$$= \frac{6,25,000}{3,75,000} = 1.67$$

$$R = \frac{7,50,000 (10.00 - 7.50)}{7,50,000 (10.00 - 7.50) - 10,00,000}$$

$$= \frac{18,75,000}{8,75,000} = 2.14$$

Computation of degree of financial leverage

Particulars	P	Q	R
Output (in units) (a)	2,50,000	1,25,000	7,50,000
Selling price (per unit) (b)	7.50	7.00	10.00
Sales (c) = (a) x (b)	18,75,000	8,75,000	75,00,000
Variable cost per (unit) (d)	5	2	7.50
Total variable cost (e) = (a) x (d)	12,50,000	2,50,000	56,25,000
Contribution (f) = (c) - (e)	6,25,000	6,25,000	18,75,000
Fixed cost (g)	5,00,000	2,50,000	10,00,000
EBIT (h) = (f) - (g)	1,25,000	3,75,000	8,75,000
Interest (i)	75,000	25,000	--
EBT (j) = (h) - (i)	50,000	3,50,000	8,75,000
Degree of Financial leverage (DOFL)			
(h)			
(K) = $\frac{(h)}{(j)}$	2.5	1.07	1

Degree of combined leverage = Degree of operating leverage x Degree of financial leverage

For

$$P = 5 \times 2.5 = 12.5$$

$$Q = 1.67 \times 1.07 = 1.78$$

$$R = 2.14 \times 1 = 2.14$$

Ans. 3 (b) (ii) Liquidity versus Profitability: (Risk return trade off) - A firm may follow a conservative, aggressive or moderate policy. However, these policies involve risk, return trade off. A conservative policy means lower return and risk. While an aggressive policy produces higher return and risk.

The two important aims of the working capital management are profitability and solvency. A liquid firm has less risk of insolvency ie, it will hardly experience a cash shortage or a stock out situation. However, there is a cost associated with maintaining a sound liquidity position. However, to have higher profitability the firm may have to sacrifice solvency and maintain a relatively low level of current assets. This will improve firm's profitability as fewer funds will be tied up in idle current assets, but its solvency would be threatened and exposed to greater risk of cash shortage and stock outs.

Therefore it clear that liquidity & profitability have inverse relationship.

Ans. 4 (a) (i) Schedule of changes in working capital

Particulars	31.3.09	31.3.10	Increase	Decrease
(A) Current Assets				
Stock	960000	1700000		

Debtors	1200000	1596000		
Prepaid Exps	100000	80000		
Cash and Bank	<u>280000</u>	<u>170000</u>		
(A)	<u>2540000</u>	<u>3546000</u>		
(B) Current Liabilities				
Creditors	800000	1160000		
Outstanding Expenses	40000	50000		
Provision for tax	<u>200000</u>	<u>240000</u>		
(B)	<u>1040000</u>	<u>1450000</u>		
Working Capital [A – B]	1500000	2096000		
Increase in W.C.	<u>596000</u>			
	<u>2096000</u>	<u>2096000</u>		

Ans. 4 (a) (ii) Statement showing funds flow from operation for the year ended march 31, 2010

Particulars	Amount
Increase in P/L	220000
Add : Depreciation on land & building	200000
Transferred to General Reserve	66000
Depreciation on Machinery	410000
Premium on Redemption of Debentures	80000
Loss on Sale of Machinery	40000
Interim dividend	240000
Proposed dividend	<u>720000</u>
Funds from operation	1976000

W.N. 1. Machinery A/c

Particulars	Amount	Particulars	Amount
To Balance b/d	3600000	By Bank A/c	100000
To Bank a/c	600000	By Dep. on sales	150000
		By P/L (Loss on Sales)	40000
		By Depreciation A/c (balancing figure)	410000
		By Balance c/d	<u>3500000</u>
	<u>4200000</u>		<u>4200000</u>

W.N. 2 Investment A/c

Particulars	Amount	Particulars	Amount
To Balance b/d	800000	By Bank	90000
To General Reserve (Profit on Sales)	<u>34000</u>	By Balance c/d	<u>744000</u>
	<u>834000</u>		<u>834000</u>

W.N. 3 Dividend A/c

Particulars	Amount	Particulars	Amount
To Cash a/c	600000	By Balance b/d	600000
To Balance c/d	<u>720000</u>	By P & L a/c (bal. figure)	<u>720000</u>
	<u>960000</u>		<u>960000</u>

W.N. 4

To Debenture	=	400000
Premium on Redemption	=	<u>80000</u>
		<u>480000</u>

W.N. 5 General Reserve A/c

Particulars	Amount	Particulars	Amount
		By Balance b/d	800000
		By Investment	34000
By Balance c/d	<u>900000</u>	By P/L (Bal. figure)	<u>66000</u>
	<u>900000</u>		<u>900000</u>

W.N. 6
Interim dividend account



To Cash a/c

Solved Ans. Costing & F.M. CA PCC Nov. 2010

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240000 By P/L Account

240000

240000

240000

Ans. 4 (b) (i)

$$\begin{aligned} \text{Break even sales quantity} &= \frac{\text{Fixed cost}}{\text{Contribution per unit}} \\ &= \frac{35,00,000}{(37.50 - 17.50)} \\ &= 1,75,000 \text{ units.} \\ \text{Cash break even sales} &= \frac{\text{Fixed cost (Excluding depreciation)}}{\text{Contribution per unit}} \\ &= \frac{20,00,000}{(37.50 - 17.50)} \\ &= 1,00,000 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{(ii) P/V ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 \\ &= \frac{20}{37.50} \times 100 = 53.33 \% \end{aligned}$$

$$\begin{aligned} \text{(iii) No. of units (to be sold)} &= \frac{\text{Fixed cost} + \text{Desired EBIT}}{\text{Contribution per unit}} \\ &= \frac{35,00,000 + 2,50,000}{20} \\ &= 1,87,500 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{(iv) Desired PAT} &= 2,50,000 \\ \text{Tax rate} &= 40\% \end{aligned}$$

$$\begin{aligned} \therefore \text{Desired Pre tax EBIT} &= \frac{\text{Desired PAT}}{(1 - t)} \\ &= \frac{2,50,000}{(1 - 0.40)} \\ &= 4,16,667 \end{aligned}$$

$$\begin{aligned} \text{Desired Sales level (Rs.)} &= \frac{\text{Fixed cost} + \text{Desired pre tax EBIT}}{\text{P/V ratio}} \\ &= \frac{35,00,000 + 4,16,667}{0.5333} \end{aligned}$$

= Rs. 73,44,210

Ans. 5 (a)
Memorandum Reconciliation A/c

Particulars	Amount	Particulars	Amount
To Net loss as per cost accounts	8,75,000	By F. OH over absorbed	47,500
To Administration OH under absorbed	32,750	By Depreciation overcharged	17,250
To Income tax	7,250	By Interest on Investment	62,750
To preliminary Exps. w/off	27,500	By Transfer fees	12,500
To under – valuation of opening stock	6,250	By Under – valuation of closing stock	17,500
		By Net – loss as per financial accounts	7,91,250
	<u>9,48,750</u>		<u>9,48,750</u>

Ans. 5 (b) (i)

Goal	Objective	Advantages	Disadvantages
Profit maximisation	Large amount of profits	(i) Easy to calculate profits (ii) Easy to determine the link between financial decisions and profits.	(i) Emphasizes the short term (ii) Ignores risk or uncertainty (iii) Ignores the timing of returns (iv) Requires immediate resources
Wealth Maximisation	Highest market value of shares.	(i) Emphasizes the long term (ii) Recognises risk or uncertainty (iii) Recognises the timing of returns (iv) Considers shareholders return.	(i) Offers no clear relationship between financial decisions and share price. (ii) Can lead to management anxiety and frustration.

Ans. 5 (b) (ii) Global Depository Receipt (GDRs): These are negotiable certificate held in the bank of one country representing a specific number of shares of a stock traded on the exchange of another country. These financial instruments are used by companies to raise capital in either dollars or Euros. These are mainly traded in European countries and particularly in London.

American Depository Deposits (ADR) : These are securities offered by non-US companies who want to list on any of the US exchange. Each ADR represents a certain number of a company's regular shares. ADRs allow US investors to buy shares of these companies without the costs of investing directly in a foreign stock exchange. ADRs are issued by an approved New York bank or trust company against the deposit of the original shares.

ADRs can be traded either by trading existing ADRs or purchasing the shares in the issuer's home market and having new ADRs created, based upon availability and market conditions.

Ans. 6 (a)
Computation of P.V. of operation cost

Particulars	Machine X	Machine Y
Operating cost for annum (a)	1,25,000	1,50,000
No. of year (b)	3	2
PVAF (c)	2.4019	1.6901
P.V. of operating cost (d) = (a) x (c)	3,00,237	2,53,515

Total outlay

Particulars	Machine X	Machine Y
P.V of operating Cost (a)	3,00,237	2,53,515

Initial outlay (b)	<u>5,50,000</u>	<u>4,00,000</u>
Total outlay (c) = (a) + (b)	8,50,237	6,53,515
Useful life (d)	3 years	2 year
PVAF (e)	2.4019	1.6901
EAV (f) = $\frac{(c)}{(e)}$	3,53,985	3,86,672

Conclusion : Since the equalised Annuity value of operating cost of machine x is lower hence it may be selected.

Ans. 6 (b) (i) As in the case of every other form of activity, it should be considered whether it would be profitable to have a cost accounting system. The benefits from such a system must exceed the amount to be spent on it. This would depend upon many factors including the nature of the business and the quality of the management.

- (i) The objective of costing system, for example whether it is being introduced for fixing prices or for insisting a system of cost control.
- (ii) The areas of operation of business wherein the managements' action will be most beneficial. For instance, in a concern, which is anxious to expand its operations, increase in production would require maximum attention. On the other hand for a concern, which is not able, to sell the whole of its production the selling effort would require greater attention. The system of costing in each case should be designed to highlight, in significant areas, factors considered important for improving the efficiency of operations in that area.
- (iii) The general organisation of the business, with a view of finding out the manner in which the system of cost control could be introduced without altering or extending the organisation appreciably.
- (iv) The technical aspects of the concern and the attitude and behaviour that will be successful in winning sympathetic assistance or support of the supervisory staff and workmen.
- (v) The manner in which different variable expenses would be affected with expansion or cessation of different operations.
- (vi) The manner in which Cost and Financial accounts could be inter-locked into a single integral accounting system and in which results of separate sets of accounts, cost and financial, could be reconciled by means of control accounts.
- (vii) The maximum amount of information that would be sufficient and how the same should be secured without too much clerical labour, especially the possibility of collection of data on a separate printed form designed for each process; also the possibility of instruction as regards filling up of the forms in writing to ensure that these would be faithfully carried out.
- (viii) How the accuracy of the data collected can be verified? Who should be made responsible for making such verification in regard to each operation and the form of certificate that he should give to indicate the verification that he has carried out ?
- (ix) The manner in which the benefits of introducing Cost Accounting could be explained to various persons in the concern, specially those in charge of production department and awareness created for the necessity of promptitude, frequency and regularity in collection of costing data.

Ans. 6 (b) (ii) Such over or under-absorption as arrived at under different situations may also be termed as overhead variance. The amount of over-absorption being represented by a credit balance in the account and conversely, the amount of under-absorption being a debit balance.

As regards the treatment of such debit or credit balances, the general view is that if the balances are small they should be transferred to the Costing Profit and Loss Account and the cost of individual products should not be increased or reduced as these would be representing normal cost.

Where, however the difference is large and due to wrong estimation, it would be desirable to adjust the cost of products manufactured, as otherwise the cost figures would convey a misleading impression. Such adjustments usually take the form of supplementary rates where there is a debit balance in the overhead account and a credit in the other case.

Now, the production of any period can be identified in three forms, goods finished and sold, goods finished but held in stock (not yet sold) and semi-finished goods (work in progress). So far as the first category of goods is concerned, it is arguable that the postmortem of the costs of individual products long after they have been sold may have some academic utility but it is frequently devoid of any practical significance. Therefore, it is suggested that the total variance concerning goods finished and sold should be adjusted by transferring the amount to the Cost of Sale Account, the costs of the individual items of such goods not being affected. As regards the variance pertaining to goods finished and held in stock (*i.e.* not yet sold), it would be necessary to adjust the value of the stock; similarly the value of work-in-progress should be adjusted.

However, over or under recovery of overheads due to abnormal reasons (such as abnormal over or under capacity utilisation) should be transferred to the Costing Profit and Loss Account.

Ans. 7 (a) The re-apportionment of service department expenses over the production departments may be carried out by using any one of the following methods :

- (i) Direct re-distribution method.
- (ii) Step method of secondary distribution or non-reciprocal method.
- (iii) Reciprocal Service method.

Direct re-distribution method: Service department costs under this method are apportioned over the production departments only, ignoring the services rendered by one service department to the other.

Step Method or Non-reciprocal method : This method gives cognizance to the service rendered by service department to another service department. Therefore, as compared to previous method, this method is more complicated because a sequence of apportionments has to be selected here. The sequence here begins with the department that renders service to the maximum number of other service departments. In other words the cost of the service department which serves the largest number of other service and production departments, is distributed first.

Reciprocal Service Method : This method recognises the fact that where there are two or more service departments they may render services to each other and, therefore, these inter-departmental services are to be given due weight while re-distributing the expenses of the service departments.

The methods available for dealing with reciprocal services are :

- (a) Simultaneous equation method ;
- (b) Repeated distribution method ;
- (c) Trial and error method.

Ans. 7 (b) In other words, the products are made to bear a proportion of the joint cost on the basis of their ability to absorb the same. Market value means weighted market value *i.e.* units produced x price of a unit of joint product.

(a) Market value at the point of separation - This method is used for the apportionment of joint costs to joint products upto the split off point. It is difficult to apply this method if the market value of the products at the point of separation are not available. It is a useful method where further processing costs are incurred disproportionately.

(b) Net realisable value method: From the sales value of the joint products (at finished stage) are deducted :

- (i) estimated profit margins,
- (ii) selling and distribution expenses, if any, and
- (iii) post-split off costs.

Ans. 7 (c) Working capital cycle indicates the length of time between a company's paying for materials, entering into stock and receiving the cash from sales of finished goods. It can be determined by adding the number of days required for each stage in the cycle. For example, a company holds raw materials on an average for 60 days, it gets credit from the supplier for 15 days, production process needs 15 days, finished goods are held for 30 days and 30 days credit is extended to debtors. The total of all these, 120 days, *i.e.*, $60 - 15 + 15 + 30 + 30$ days is the total working capital cycle.

The determination of working capital cycle helps in the forecast, control and management of working capital. It indicates the total time lag and the relative significance of its constituent parts. The duration of working capital cycle may vary depending on the nature of the business.

In the form of an equation, the operating cycle process can be expressed as follows:

$$\text{Operating Cycle} = R + W + F + D - C$$

Where,

- R = Raw material storage period
- W = Work-in-progress holding period
- F = Finished goods storage period
- D = Debtors collection period.
- C = Credit period availed.

Ans. 7 (d) The basic objective of financial management is to design an appropriate capital structure which can provide the highest earnings per share (EPS) over the firm's expected range of earnings before interest and taxes

(EBIT). EPS measures a firm's performance for the investors. The level of EBIT varies from year to year and represents the success of a firm's operations. EBIT-EPS analysis is a vital tool for designing the optimal capital structure of a firm. The objective of this analysis is to find the EBIT level that will equate EPS regardless of the financing plan chosen.

Financial break-even point is the minimum level of EBIT needed to satisfy all the fixed financial charges i.e. interest and preference dividends. It denotes the level of EBIT for which the firm's EPS equals zero. If the EBIT is less than the financial breakeven point, then the EPS will be negative but if the expected level of EBIT is more than the breakeven point, then more fixed costs financing instruments can be taken in the capital structure, otherwise, equity would be preferred. EBIT-EPS breakeven analysis is used for determining the appropriate amount of debt a firm might carry.

Ans. 7 (e) There are three methods of calculation labour turnover which are given below :

- Number of employees replaced
- (i) Replacement method = $\frac{\text{Number of employees replaced}}{\text{Average number of employees on roll}} \times 100$
- Number of employees separated during the year
- (ii) Separation method = $\frac{\text{Number of employees separated during the year}}{\text{Average number of employees on rolls during the period}} \times 100$
- Number of employees separated + number of employees replaced
- (iii) Flux method = $\frac{\text{Number of employees separated + number of employees replaced}}{\text{Average number of employees on rolls during the period}} \times 100$

Labour turnover due to new recruitment: Workers joining a business concern on account of its expansion do not account for labour turnover. But these newly recruited workers are certainly responsible for a change in the composition of labour force, due to this feature, some cost accountants measure workers to the extent of new (excluding replacements) joining the labour force as follows :

$$\frac{\text{No. of new workers joining in a period (excluding replacements)}}{\text{Average number of workers on the roll in a period}} \times 100$$

The total number of workers joining, including replacements, are called accessions. The labour turnover rate, in such a case, may also be computed in respect of total number of workers joining (accessions) the business concern, during a given period both on account of replacements and because of expansion is as under:

$$\frac{\text{No. of accessions in a period}}{\text{Average number of workers in a period}} \times 100$$

When number of accessions are considered for measuring labour turnover, the labour turnover rate by flux method may be computed by using any one of the following expressions :

$$\text{Labour turnover rate (Flux method)} = \frac{\text{No. of separations + No. of replacements + No. of new recruitments}}{\text{Average number of workers}} \times 100$$

OR

$$\frac{\text{No. of separations + No. of accessions}}{\text{Average number of workers}}$$

The above rate of labour turnover indicates the total effect of number of workers separated, number of workers replaced and number of new workers recruited and joined the concern on account of its expansion, etc.

If in the above computations, the data given is for a period other than a year, the labour turnover rate so computed may be converted into equivalent annual labour turnover rate by the following formula:

$$\text{Equivalent annual labour turnover rate} = \frac{\text{Turnover rate for the period}}{\text{Number of days in the period}} \times 365$$