Costing and Financial Management old syllabus answer key

1a)

(1) A = Annual usage of parts = Monthly demand for monitors × 4 parts × 12 months

= 2,000 monitors × 4 parts × 12 months = 96,000 units

O = Ordering cost per order = ₹ 1,000/- per order

C_1 = Cost per part = ₹ 350/-

$_iC_1$ = Inventory carrying cost per unit per annum

=20% × ₹ 350 = ₹ 70/- per unit, per annum

Economic order quantity (EOQ):

$$E.O.Q = \sqrt{\frac{2AO}{{}_iC_1}} = \sqrt{\frac{2 \times 96{,}000 \text{ units} \times ₹1{,}000}{₹70}}$$

= 1,656 parts (approx.)

The supplier is willing to supply 30,000 units at a discount of 5%, therefore cost of each part shall be ₹350 – 5% of 350 = ₹332.5

Total cost (when order size is 30,000 units):

= Cost of 96,000 units + Ordering cost + Carrying cost.

$$= (96{,}000 \text{ units} \times ₹ 332.50) + \left(\frac{96{,}000 \text{units}}{30{,}000 \text{ units}} \times ₹1{,}000\right) + \frac{1}{2}(30{,}000 \text{ units} \times 20\% \times ₹ 332.50)$$

= ₹ 3,19,20,000 + ₹ 3,200* + ₹ 9,97,500 = ₹ 3,29,20,700

Total cost (when order size is 1,656 units):

$$= (96{,}000 \text{ units} \times ₹350) + \left(\frac{96{,}000 \text{units}}{1{,}656 \text{ units}} \times ₹1{,}000\right) + \frac{1}{2}(1{,}656 \text{ units} \times 20\% \times ₹350)$$

= ₹3,36,00,000 + ₹57,970* + ₹57,960 = ₹3,37,15,930

Since, the total cost under the supply of 30,000 units with 5% discount is lower than that when order size is 1.656 units. therefore the offer should be accepted.

Note: While accepting this offer consideration of capital blocked on order size of 30,000 units has been ignored.

**Order size can also be taken in absolute figure.*

(2) Reorder level

= Maximum consumption × Maximum re-order period

= 710 units × 5 weeks = 3,550 units

(3) Maximum level of stock

= Re-order level + Reorder quantity – (Min. usage × Min. reorder period)

= 3,550 units + 1,656 units – (140 units × 3 weeks) = 4,786 units.

(4) Minimum level of stock

= Re-order level – Normal usage × Average reorder period

= 3,550 units – (425 units × 4 weeks) = 1,850 units.

1b)

	Andrew	Baker
Time allowed (Hours)	100	100
Time taken (Hours)	60	80
Time saved (Hours)	40	20
Let the rate of wages of the worker Baker is 'L' per hour		
Normal Wages	₹ 1,440 (60 hours× ₹24)	₹ 80 L (80 hours× L)
Bonus	₹ 480*	₹ 16 L**
Total earnings	₹ 1,920	₹ 96 L

* Bonus under Halsey system $= \frac{1}{2} \times \text{Time saved} \times \text{Rate per hour}$

$= \frac{1}{2} \times 40 \text{ hours} \times ₹24 = ₹480$

** Bonus under Rowan system $= \frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time worked} \times \text{Rate per hour}$

$= \frac{20 \text{ hours}}{100 \text{ hours}} \times 80 \text{ hours} \times L = 16\ L$

According to the problem,

Total earnings of Andrew = Total earnings of Baker

₹ 1,920 = ₹ 96 L

L = ₹ 20

Therefore, Hourly rate of wages of Baker is ₹ 20 per hour.

1c)

$$A = P\left(\frac{I(1+I)^n}{(1+I)^n - 1}\right)$$

Where,

A = Amount of Instalment

P = Principal amount of loan

I = Interest rate

n = Loan repayment period.

$$A = 30,00,000\left(\frac{0.14(1+0.14)^{10}}{(1+0.14)^{10} - 1}\right)$$

$$A = 30,00,000 \times \frac{0.14 \times 3.707}{2.707}$$

A = 5,75,153

Or

$$A = \frac{P}{PVIFA_{n,I}}$$

$$A = \frac{30,00,000}{PVIFA_{10,0.14}} = \frac{30,00,000}{5.216} = 5,75,153$$

1d)

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)

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

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

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

$$\text{Or, \% change in EPS} = 5.687 \times 5 = 28.4375\%$$

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

Working Notes:

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

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

2a)

Memorandum Reconciliation Accounts

Dr. Cr.

Particulars		Amount (₹)	Particulars		Amount (₹)
To	Net Loss as per Cost Accounts	48,700	By	Administration overheads over recovered in Cost Accounts	65,000
To	Factory overheads under absorbed in Cost Accounts	30,500	By	Depreciation overcharged in Cost Accounts (₹ 2,70,000 – ₹ 2,25,000)	45,000
To	Provision for Income tax	52,400	By	Transfer fees in Financial Accounts	10,200
To	Obsolescence loss	20,700	By	Notional Rent of own premises	54,000
To	Overvaluation of closing stock in Cost Accounts**	9,500	By	Overvaluation of Opening stock in Cost Accounts*	23,000
To	Net Profit (as per Financial Accounts)	35,400			
		1,97,200			1,97,200

* Overvaluation of Opening Stock as per Cost Accounts

= Value in Cost Accounts – Value in Financial Accounts

= ₹ 1,38,000 – ₹ 1,15,000 = ₹ 23,000.

** Overvaluation of Closing Stock as per Cost Accounts

= Value in Cost Accounts – Value in Financial Accounts

= ₹ 1,22,000 – ₹ 1,12,500 = ₹ 9,500.

2b)

Working Notes:

1. **Capital employed before expansion plan:**

	(₹)
Equity shares (₹10 × 80,000 shares)	8,00,000
Debentures {(₹ 1,20,000/12) × 100}	10,00,000
Retained earnings	12,00,000
Total capital employed	30,00,000

2. **Earnings before the payment of interest and tax (EBIT):**

	(₹)
Profit (EBT)	3,00,000
Interest	1,20,000
EBIT	4,20,000

3. **Return on Capital Employed (ROCE):**

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital employed}} \times 100 = \frac{₹4,20,000}{₹30,00,000} \times 100 = 14\%$$

4. **Earnings before interest and tax (EBIT) after expansion scheme:**

After expansion, capital employed = ₹ 30,00,000 + ₹4,00,000 = ₹ 34,00,000

Desired EBIT = 14% × ₹34,00,000 = ₹4,76,000

(i) Computation of Earnings Per Share (EPS) under the following options:

	Present situation	Expansion scheme Additional funds raised as	
		Debt	Equity
	(₹)	(₹)	(₹)
Earnings before Interest and Tax (EBIT)	4,20,000	4,76,000	476,000
Less: Interest - Old capital	1,20,000	1,20,000	1,20,000
- New capital	--	48,000 (₹4,00,000 × 12%)	--
Earnings before Tax (EBT)	3,00,000	3,08,000	3,56,000

Less: Tax (50% of EBT)	1,50,000	1,54,000	1,78,000
PAT	1,50,000	1,54,000	1,78,000
No. of shares outstanding	80,000	80,000	1,20,000
Earnings per Share (EPS)	1.875 $\left(\frac{₹1,50,000}{80,000}\right)$	1.925 $\left(\frac{₹1,54,000}{80,000}\right)$	1.48 $\left(\frac{₹1,78,000}{1,20,000}\right)$

(ii) Advise to the Company: When the expansion scheme is financed by additional debt, the EPS is higher. Hence, the company should finance the expansion scheme by raising debt.

3a)

(i) Computation of Current Weighted Average Cost of Capital

(a) Cost of 12% Debentures (K_d) $= \frac{I(1-t)}{NP} = \frac{₹12(1-0.3)}{₹100} = 0.084$ or 8.4%

(b) Cost of Equity Share Capital (K_e) $= \frac{D_0(1+g)}{P_0} + g = \frac{₹100 \times 24\%(1+0.05)}{₹600} + 0.05$

$= \frac{₹25.2}{₹600} + 0.05 = 0.092$ or 9.2%

Source of capital	Amount (₹)	Weight	After tax Cost of Capital (%)	WACC (%)
Equity share capital (including Reserve & Surplus)	7,20,00,000	0.80	9.20	7.36
12% Debentures	1,80,00,000	0.20	8.40	1.68
Weighted Average Cost of Capital				9.04

(ii) Computation of New Weighted Average Cost of Capital

(a) Cost of Existing 12% Debentures (K_d) = 8.4 % (as calculated above)

(b) Cost of Term Loan (K_t) = Rate of Interest (r) × (1-tax rate)

= 0.18 (1-.03) = 0.126 or 12.6%

(c) Cost of Equity Share Capital (K_e) $= \frac{₹24(1.05)}{₹500} + 0.05 = \frac{₹25.2}{₹500} + 0.05$

= 0.0504 + 0.05 = 0.1004 = 10.04%

Source of capital	Amount (₹)	Weight	After tax Cost of Capital (%)	WACC (%)
Equity share capital (including Reserve & Surplus)	7,20,00,000	0.60	10.04	6.02
12% Debentures	1,80,00,000	0.15	8.40	1.26
18% Term loan	3,00,00,000	0.25	12.60	3.15
Weighted Average Cost of Capital				10.43

[WACC for the company can also be calculated using market value weights]

3b)

Fixed expenses per month

			(₹)
Rent (one fourth of the total)			75.00
Lighting (one fifth of the total)			16.00
Foreman's salary (one sixth of the total)			160.00
Sundry expenses–oil, waste etc.			9.00
Insurance (1% on the value of the machine per year)			8.33
Total constant expenses per month			268.33
Total number of hours per annum	4,380		
Total number of hours per month	365		
		(₹)	(₹)
Fixed expenses per hour : ₹ 268.33 / 365 hrs.			0.735
Variable expenses per hour :			
Depreciation :			
Cost of the machine		10,000	
Less: Scrap value		900	
		9,100	
Depreciation per annum		910	
Depreciation per hour: 910 / 4,380 hrs.			0.208
Repairs for the whole life		18,000	
for one hour ₹ 18,000 / 4,380×10 years			0.411
Electricity for one hour : 15 units @ 0.05 P			0.750
Machine hour rate :			2.104

4a)

(a) Working Notes:

1.	*Manufacturing expenses*		₹
	Sales		24,00,000
	Less: Gross profit margin at 20%		4,80,000
	Total Manufacturing cost		19,20,000
	Less: Materials consumed	6,00,000	
	Wages	4,80,000	10,80,000
	Manufacturing expenses		8,40,000
	Less: Cash manufacturing expenses (50,000 × 12)		6,00,000
	Depreciation		2,40,000
2.	*Total cash costs*		₹
	Manufacturing costs		19,20,000
	Less: Depreciation		2,40,000
	Cash Manufacturing costs		16,80,000
	Add: Administrative expenses		1,50,000
	Add: Sales promotion expenses		75,000
	Total cash costs		19,05,000

Statement showing the Requirements of Working Capital of the Company

		₹
Current Assets:		
Debtors 1/6 th of total cash costs (1/6 × ₹ 19,05,000)		3,17,500
(Refer to Working note 2)		
Sales promotion expenses (prepaid)		18,750
Stock of raw materials (1 month)		50,000
Finished goods (1/12 of cash manufacturing costs)		1,40,000
(₹ 16,80,000 x 1/12)		
(Refer to Working note 2)		
Cash in hand		80,000
		6,06,250
Less: Current liabilities		
Creditors for goods (2 months)	1,00,000	
Wages (1 month)	40,000	
Manufacturing expenses (1 month)	50,000	
Administrative expenses (1 month)	12,500	2,02,500
Net working capital		4,03,750
Add: Safety margin 10%		40,375
Working Capital Required		4,44,125

4b)

Statement of Equivalent production of Process RT

Input units	Details	Output units	Equivalent Production			
			Material		Conversion cost	
			units	(%)	units	(%)
4,000	Opening WIP					
16,000	Introduced completed	14,400	14,400	100	14,400	100
	and transfer to next					
	Normal spoilage	1,440	--	--	--	--
	Abnormal Spoilage	1,160	1,160	100	1,160	100
	Closing WIP	3,000	3,000	100	2,000	66.67
20,000		20,000	18,560		17,560	

Statement showing Cost of each element

	Opening (₹)	Cost in Process (₹)	Total (₹)	Equivalent Units	Cost per unit (₹)
Materials	30,000	1,20,000	1,50,000	18,560	8.0819
Conversion cost	29,200	1,60,800	1,90,000	17,560	10.8200

Statement of Apportionment of cost

Completed Units	Material	14,400	8.0819	1,16,380
	Conversion cost	14,400	10.8200	1,55,808
				2,72,188
Closing stock	Material	3,000	8.0819	24,246
	Conversion cost	2,000	10.8200	21,640
				45,886
Abnormal Loss	Material	1,160	8.0819	9,375
	Conversion cost	1,160	10.8200	12,551
				21,926

Process-RT Account

Particulars	Units	Amount	Particulars	Units	Amount
To Opening WIP	4,000	59,200	By Normal Loss	1,440	--
To Material introduced	16,000	1,20,000	By Abnormal loss	1,160	21,926
To Conversion cost		1,60,800	By Transfer to next process	14,400	2,72,188
			By Closing WIP	3,000	45,886
	20,000	3, 40,000		20,000	3, 40,000

4c)

The points of distinction between cash flow and funds flow statement are as below:

Cash flow statement	Funds flow statement
(i) It ascertains the changes in balance of cash in hand and bank.	(i) It ascertains the changes in financial position between two accounting periods.
(ii) It analyses the reasons for changes in balance of cash in hand and bank	(ii) It analyses the reasons for change in financial position between two balance sheets
(iii) It shows the inflows and outflows of cash.	(iii) It reveals the sources and application of finds.
(iv) It is an important tool for short term analysis.	(iv) It helps to test whether working capital has been effectively used or not.
(v) The two significant areas of analysis are cash generating efficiency and free cash flow.	

5a)

(a) Material price variance:

= (Standard price – Actual Price) × Actual quantity

= (₹ 4 – ₹ 4.10) × 5,000 = ₹ 500 Adv.

(b) Material usage variance:

= (Std. quantity for actual output – Actual qtty.) × Std. price

= (600 × 5 – 3,500) × 4 = ₹ 2,000 Adv.

(c) Labour Rate Variance:

= (Standard rate – Actual rate) × Actual hours

= (₹10 – ₹9) × 1,700 = ₹ 1,700 Fav.

(d) Labour Efficiency Variance:

= (Standard hours for actual output – Actual hours) × Standard rate

= (600 × 3 – 1,700) × ₹10

= ₹ 1,000 Fav.

(e) Variable Overhead Expenditure Variance

= (Actual Hours × Standard Rate) – Actual Overhead

= (1,700 × ₹ 1) – ₹ 1,900

= ₹ 200 Adv.

(f) Variable Overhead Efficiency Variance:

= Std. hours for actual output – Actual hours) × Std. rate

= (600 × 3 – 1,700) × ₹1 = ₹100 Fav.

(g) Fixed Overhead Expenditure Variance:

= (Budgeted overhead – Actual overhead)

= (1,800 × 0.50 – 900) = Nil

(h) Fixed Overhead Volume Variance:

= (Std. hours for actual output – Budgeted hours) × Std. rate

= (600 × 3 – 1,800) × ₹ 0.50 = Nil

(i) Fixed Overhead Capacity Variance:

= (Budgeted hours – Actual Hours) × Standard rate

= (1,800 – 1,700) × ₹ 0.50 = ₹ 50 Adv.

(j) Fixed Overhead Efficiency Variance:

= (Std. hours for actual output – Actual hours) × Standard rate

= (600 × 3 – 1,700) × ₹ 0.50 = ₹ 50 Fav.

Verification:	(₹)	(₹)
Overhead recovered: 600 units @ ₹4.50		2,700
Actual Overhead:		
Variable	1,900	
Fixed	900	2,800
		100 Adv.
Variable expenditure variance		200 Adv
Variable Efficiency variance		100 Fav.
Fixed expenditure variance		Nil
Fixed overhead volume variance		Nil
		100 Adv.

Reconciliation Statement

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

5b)

Master Budget for the year ending

Sales:		(₹)
Toughened Glass		6,00,000
Bent Glass		2,00,000
Total Sales		8,00,000
Less: Cost of production:		
Direct materials (60% of ₹ 8,00,000)	4,80,000	
Direct wages (20 workers × ₹ 150 × 12months)	36,000	
Prime Cost	5,16,000	

Fixed Factory Overhead:			
Works manager's salary (500 × 12)	6,000		
Foreman's salary (400 × 12)	4,800		
Depreciation	12,600		
Light and power (assumed fixed)	3,000	26,400	
Variable Factory Overhead:			
Stores and spares	20,000		
Repairs and maintenance	8,000		
Sundry expenses	3,600	31,600	
Works Cost			5,74,000
Gross Profit (Sales – Works cost)			2,26,000
Less: Adm., selling and distribution expenses			36,000
Net Profit			1,90,000

6a)

Working notes:

1. **Current assets and Current liabilities computation:**

$$\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{2.5}{1}$$

Or Current assets = 2.5 Current liabilities

Now, Working capital = Current assets – Current liabilities

Or ₹ 2,40,000 = 2.5 Current liability – Current liability

Or 1.5 Current liability = ₹ 2,40,000

∴ Current liabilities = ₹ 1,60,000

So, Current assets = ₹1,60,000 × 2.5 = ₹4,00,000

2. Computation of stock

$$\text{Liquid ratio} = \frac{\text{Liquid assets}}{\text{Current liabilities}}$$

$$\text{Or } 1.5 = \frac{\text{Current assets - Inventories}}{\text{Rs.1,60,000}}$$

Or 1.5 × ₹ 1, 60,000 = ₹ 4,00,000 – Inventories

Or Inventories = ₹4, 00,000 – ₹ 2, 40,000

Or Stock = ₹ 1, 60,000

6b)

	Sales (₹)	Profit (₹)
Year 2016	4,00,000	15,000 (loss)
Year 2017	5,00,000	15,000 (profit)
Difference	1,00,000	30,000

(i) $\text{P/V Ratio} = \frac{\text{Difference in profit}}{\text{Difference in Sales}} \times 100 = \frac{30,000}{1,00,000} \times 100 = 30\ \%$

(ii)

	(₹)
Contribution in 2016 (4,00,000 × 30%)	1,20,000
Add: Loss	15,000
Fixed Cost*	1,35,000

*Contribution = Fixed cost + Profit

∴ Fixed cost = Contribution – Profit

(iii) Break-even point = $\frac{\text{Fixed cost}}{\text{P/V ratio}} = \frac{1,35,000}{30\%} = ₹\ 4,50,000$

(iv) Sales to earn a profit of ₹ 45,000

$\frac{\text{Fixed cost + Desired profit}}{\text{P / V ratio}} = \frac{1,35,000 + 45,000}{30\%} = ₹\ 6,00,000$

(v) Margin of safety in 2017 –18

Margin of safety = Actual sales – Break-even sales

= 5,00,000 – 4,50,000 = ₹ 50,000.

3. Computation of Proprietary fund; Fixed assets; Capital and Sundry creditors

Fixed Asset to Proprietary ratio = $\frac{\text{Fixed assets}}{\text{Proprietary fund}} = 0.75$

$\therefore$ Fixed assets = 0.75 Proprietary fund (PF) [FA + NWC = PF or NWC = PF- FA (i.e. .75 PF)]

and Net working capital (NWC) = 0.25 Proprietary fund

Or ₹2,40,000/0.25 = Proprietary fund

Or Proprietary fund = ₹9,60,000

and Fixed assets = 0.75 proprietary fund

= 0.75 × ₹9,60,000

= ₹7,20,000

Capital = Proprietary fund – Reserves & Surplus

= ₹9,60,000 – ₹1,60,000 = ₹8,00,000

Sundry creditors = (Current liabilities – Bank overdraft)

= (₹1,60,000 – ₹40,000) = ₹1,20,000

Balance Sheet

Liabilities	₹	*Assets*	₹
Capital	8,00,000	Fixed assets	7,20,000
Reserves & Surplus	1,60,000	Stock	1,60,000
Bank overdraft	40,000	Current assets	2,40,000
Sundry creditors	1,20,000		
	11,20,000		11,20,000

6c)

A firm's financial management may often have the following as their objectives:

(i) The maximisation of firm's profit.

(ii) The maximisation of firm's value / wealth.

The maximisation of profit is often considered as an implied objective of a firm. To achieve the aforesaid objective various type of financing decisions may be taken. Options resulting into maximisation of profit may be selected by the firm's decision makers. They even sometime may adopt policies yielding exorbitant profits in short run which may prove to be unhealthy for the growth, survival and overall interests of the firm. The profit of the firm in this case is measured in terms of its total accounting profit available to its shareholders.

The value/wealth of a firm is defined as the market price of the firm's stock. The market price of a firm's stock represents the focal judgment of all market participants as to what the value of the particular firm is. It takes into account present and prospective future earnings per share, the timing and risk of these earnings, the dividend policy of the firm and many other factors that bear upon the market price of the stock.

The value maximisation objective of a firm is superior to its profit maximisation objective due to following reasons.

1. The value maximisation objective of a firm considers all future cash flows, dividends, earning per share, risk of a decision etc. whereas profit maximisation objective does not consider the effect of EPS, dividend paid or any other returns to shareholders or the wealth of the shareholder.
2. A firm that wishes to maximise the shareholders wealth may pay regular dividends whereas a firm with the objective of profit maximisation may refrain from dividend payment to its shareholders.
3. Shareholders would prefer an increase in the firm's wealth against its generation of increasing flow of profits.
4. The market price of a share reflects the shareholders expected return, considering the long-term prospects of the firm, reflects the differences in timings of the returns, considers risk and recognizes the importance of distribution of returns.

The maximisation of a firm's value as reflected in the market price of a share is viewed as a proper goal of a firm. The profit maximisation can be considered as a part of the wealth maximisation strategy.

7a)

Marginal Costing and Differential Costing

Marginal Costing is defined as the 'Ascertainment of marginal costs and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs'.

Differential Costing is defined as the technique of costing which uses differential costs and/or differential revenues for ascertaining the acceptability of an alternative. The technique may be termed as incremental costing when the difference is increase in costs and decremental costing when the difference is decrease in costs. The main points of distinction between marginal costing and differential costing are as below:

(a) The technique of marginal costing requires a clear distinction between variable costs and fixed costs whereas no such distinction is made in the case of differential costing.

(b) In marginal costing, margin of contribution and contribution ratio are the main yard sticks for performance evaluation and for decision making whereas under differential costs analysis, differential costs are compared with the incremental or decremental revenue (as the case may be) for arriving at a decision.

(c) Differential cost analysis is possible in both absorption costing and marginal costing, where as marginal costing in itself is a distinct technique.

(d) Marginal cost may be incorporated in the cost accounting system whereas differential costs are worked out separately.

7b)

Books of Modern Constructions Ltd.

Contract No. B-37 Account for the year ended 31st March, 2014

Particulars		(₹)	Particulars		(₹)
To WIP b/d:			By Materials returned to Store		25,000
- Work certified	9,40,000		By Material returned to suppliers		15,000
- Work uncertified	11,200		By WIP c/d :		
To Stock (Materials) b/d		8,000	Work Certified	30,00,000	
To Materials issued		4,00,000	Uncertified work	32,000	30,32,000
To Materials purchased		1,50,000	By Materials stock c/d		20,000
To Wages paid	6,00,000				
Less: Opening O/s	(5,000)				
Add: Closing O/s	3,000	5,98,000			

To	Architect's fees	51,000		
To	Plant Hire charges	50,000		
To	Indirect expenses	10,000		
To	General overheads	18,000		
To	Notional profit c/d	8,55,800		
		30,92,000		30,92,000
To	Profit and Loss A/c $\left(\frac{2}{3} \times ₹\,8,55,800 \times \frac{80}{100}\right)$	4,56,427	By Notional Profit b/d	8,55,800
To	WIP Reserve c/d	3,99,373		
		8,55,800		8,55,800

Note: Fines and penalties are not shown in contract accounts.

Contractee's Account

		(₹)		(₹)
To	Balance c/d	24,00,000	By Balance b/d (80% of 9,40,000)	7,52,000
			By Bank	16,48,000
		24,00,000		24,00,000

Balance Sheet (Extract) as on 31.3.2014

		(₹)			(₹)
P & L A/c	4,56,427		Materials stock at site		20,000
Less: Fines	12,000	4,44,427	Materials stock in store		25,000
Outstanding wages		3,000	WIP:		
			Work Certified	30,00,000	
			Work Uncertified	32,000	
				30,32,000	
			Less: Advance	24,00,000	
				6,32,000	
			Less: WIP Reserve	3,99,373	2,32,627

7c)

Statement of Operating Profit

(₹ in lacs)

Years	1	2	3	4
Sales :(A)	322	322	418	418
Material consumption	30	40	85	85
Wages	60	65	85	100
Other expenses	40	45	54	70
Factory overheads (insurance)	30	30	30	30
Loss of rent	10	10	10	10
Interest	32	24	16	8
Depreciation (as per income tax rules)	50	38	28	21
Total cost: (B)	252	252	308	324
Profit (C)=(A)-(B)	70	70	110	94
Tax (50%)	35	35	55	47
Profit after Tax (PAT)	35	35	55	47

Statement of Incremental Cash Flows

(₹ in lacs)

Years	0	1	2	3	4
Material stocks	(20)	(35)	-	-	(55)
Compensation for contract	(30)	-	-	-	-
Contract payment saved	-	50	50	50	50
Tax on contract payment	-	(25)	(25)	(25)	(25)
Incremental profit	-	70	70	110	94
Depreciation added back	-	50	38	28	21
Tax on profits	-	(35)	(35)	(55)	(47)
Loan repayment	-	(50)	(50)	(50)	(50)
Profit on sale of machinery (net)	-	-	-	-	5
Total incremental cash flows	(50)	25	48	58	103
Present value factor	1.00	0.870	0.756	0.658	0.572
Net present value of cash flows	(50)	21.75	36.288	38.164	58.916
Net present value	= ₹ 155.118 – ₹ 50 = 105.118 lacs.				

Advice: Since the net present value of cash flows is ₹ 105.118 lacs which is positive the management should install the machine for processing the waste.

Notes:

1. Material stock increases are taken in cash flows.
2. Idle time wages have also been considered
3. Apportioned factory overheads are not relevant only insurance charges of this project are relevant.
4. Interest calculated at 16% based on 4 equal instalments of loan repayment.
5. Sale of machinery- Net income after deducting removal expenses taken. Tax on Capital gains ignored.
6. Saving in contract payment and income tax thereon considered in the cash flows.