

## **Paper 8- Cost Accounting & Financial Management**

**Paper-8: Cost Accounting & Financial Management**

Full Marks:100

Time allowed:3 hours

Sec-A: Answer Question No. 1 which is compulsory Carries 25 Marks

1. Answer the following questions

(A) Each Question carries 2 Marks [5 × 2 = 10]

- (i) Company A Ltd. consumes maximum 100 Units Per day. Maximum lead time is 30 Days then what is the reorder level?
- (ii) X Ltd has 240 employees at the beginning of the year and 310 employees at the year end. No of employees replaced during the year 25. What is the Labour turnover under Replacement method?
- (iii) The overheads of a Company at 10,000 units is ₹1,00,000 and Overheads rate the 20,000 units is ₹1,50,000. What is the variable overhead Per Unit?
- (iv) A Company's EBIT is ₹1,00,000. Company has no Debt outstanding and Equity is ₹10,00,000 (100000 shares of ₹10 each). Tax Rate is 30%. Compute the EPS?
- (v) Current Liabilities of a company is ₹60,000, Current Ratio is 2.5 and Liquid Ratio is 1.5 then what is the Inventory value?

(B) State whether the following statements are True or False [5 × 1 = 5]

- (i) Cost Control and Cost Reductions are one and the same.
- (ii) At EOQ Ordering Cost and Carrying Cost are at Minimum and also equal.
- (iii) Cost of Concealed Idle Time is charged to Jobs.
- (iv) Preliminary expenses in the Balance Sheet is included under Fixed Assets.
- (v) At Internal Rate of Return the Profitability Index will be Zero.

(C) Fill in the Blanks [5 × 1 = 5]

- (i) Prime Cost is the aggregate of .....
- (ii) Store Ledger is maintained by .....department.
- (iii) Distribution of all items of Overheads to Product or Departments is known as .....
- (iv) In Financial Management EPS stands for .....
- (v) NPV is the difference between .....

(D) Match the Following [5 × 1 = 5]

(i) Sunk Cost	(A) Maximum Permissible Bank Finance
(ii) VED Analysis	(B) Capital Structure
(iii) MM Approach	(C) Not Relevant for Decision Making
(iv) Tandon Committee	(D) Labour Incentive Method
(V) F.W.Taylor	(E) Inventory Control Technique

**Answer:**

**(A) (i)** Re-order Level = Maximum Consumption x Maximum Lead time  
= 100 Units x 30 days  
= 3000 units

**(ii)** Replacement Method =  $\frac{\text{Av. Replacement}}{\text{Av. Employees employed in a year}}$   
$$= \frac{25}{\frac{240 + 310}{2}} \times 100 = 9.09\%$$

**(iii)** Variable OH per unit =  $\frac{\text{Difference in overhead}}{\text{Difference in units}}$   
$$= \frac{1,50,000 - 1,00,000}{20,000 - 10,000}$$
$$= \frac{50,000}{10,000} = ₹5 \text{ per unit}$$

**(iv)** EBIT = 1,00,000  
(-) Tax (30%) = 30,000  
PAT = 70,000  
No. of shares = 1,00,000

$$\text{EPS} = \frac{\text{PAT}}{\text{No. of shares}}$$
$$= \frac{70,000}{1,00,000}$$
$$= .70 \text{ per share}$$

**(v)** Current Ratio =  $\frac{\text{Current Assets}}{\text{Current Liabilities}}$   
$$2.5 = \frac{\text{Current Assets}}{60,000}$$

Current Assets = 2.5 x 60,000  
= ₹1,50,000

Liquid Ratio =  $\frac{\text{Liquid Assets}}{\text{Current Liabilities}}$

$$1.5 = \frac{\text{Liquid Assets}}{60,000}$$

Liquid Assets = 1.5 x 60,000  
= 90,000

Inventory = 1,50,000 – 90,000 = ₹60,000

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- (B) (i) False  
(ii) True  
(iii) True  
(iv) False  
(v) False
- (C) (i) All direct expenses (Direct Material + Direct Labour + Direct Expenses)  
(ii) Costing Department  
(iii) Apportionment/ Allocation  
(iv) Earning Per Share  
(v) Present Value of Cash Inflows and Present value of Cash Outflow

(D) Match

(i) Sunk Cost	(C) Not Relevant for Decision Making
(ii) VED Analysis	(E) Inventory Control Technique
(iii) MM Approach	(B) Capital Structure
(iv) Tandon Committee	(A) Maximum Permissible Bank Finance
(V) F.W.Taylor	(D) Labour Incentive Method

### Sec-B

Answer any three Question from Q. No 2,3,4 and 5. Each Question carries 15 Marks

- 2.(A) PQR Limited Produces a product which has a monthly demand of 52,000 units. The product requires a Component X which is purchased at ₹15 per unit. For every finished product, 2 units of Component X are required. The ordering cost is ₹350 per order and the carrying cost is 12% p.a.

Required:

- (i) Calculate the economic order quantity for Component X.  
(ii) If the minimum lot size to be supplied is 52,000 units, what is the extra cost, the company has to incur?  
(iii) What is the minimum carrying cost, the company has to incur? [4+4+4]=12]

(B) Write a short note on Bill Material

[3]

Answer:

- (A) Annual Consumption of Component X  
= 52,000 units x 2 x 12 months  
= 12,48,000 units.

(i) Calculation of Economic Order Quantity

$$\text{EOQ} = \sqrt{\frac{2 \times 12,48,000 \times ₹350}{₹15 \times 12 / 100}}$$
$$= 22,030 \text{ Units}$$

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**(ii) Calculation of Extra Cost if Minimum Lot size to be supplied is 52,000 units.**

(a)	If Lot size is 52,000 units		
	Ordering cost	= (12,48,000/52,000 x ₹ 350)	8,400
	Carrying cost	= (52,000 units x 1/2 x ₹ 15 x 12/100)	46,800
			55,200
(b)	If Lot size is 22,030 units (EOQ)		
	Ordering cost	= (12,48,000/22,030 x ₹ 350)	19,828
	Carrying cost	= (22,030 units x 1/2 x ₹ 15 x 12/100)	19,827
			39,655
Extra cost (a) – (b)			15,545

**(iii)** Minimum Carrying Cost = 22,030, Units × 1/2 × ₹15 × 12/100 = ₹19,827

**(B)** Bill of Material is a complete schedule of parts and materials required for a particular order prepared by the Drawing Office and issued by it together with necessary blue prints of drawings. For standard products, printed copies of Bill of Material are kept with blank spaces for any special details of modification to be filled in for a particular job/order. The schedule details everything, even to bolts and nuts, sizes and weights. The document solves a number of useful purposes, such as:

- It provides a quantitative estimate of budget of material required for a given job, process or operation which might be used for control purposes.
- It substitutes material requisitions and expedite issue of materials.
- The store-keeper can draw up a programme of material purchases and issue for a given period.
- It provides the basis for charging material cost to the respective job/process.

**3.(A) The following particulars for the first week of September, 2012 relate to X and Y two workers employed in a factory:**

	X	Y
a) Job Completed --- units	3,600	4,200
b) Cut of above output rejected and unsalable	540	420
c) Time allowed	12 Mts/dozen	3Hrs./200 units
d) Basic wage rate per hour	₹5	₹6
e) Hours worked	45	50

The normal working hours per week are fixed at 42 hours. Bonus is paid @2/3 of the basic wage rate for gross time worked and gross output produced without deduction for rejected output. The rate of overtime for first 4 hours is paid at time plus 1/3 and for next 4 hours is paid at time plus 1/2.

From the above data calculate for each employed

- a) Number of bonus hours and amount of bonus earned
- b) Total wages earned including basic wages overtime premium and bonus;
- c) Direct wages cost per 100 saleable units. [12]

**(B) Differences between Merit Rating and Job Evaluation [3]**

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Answer:

(A)

	Particulars	X	Y
1.	No. of units completed	3,600	4,200
2.	Rejected units	540	420
3.	Saleable units	3,060	3,780
4.	Standard time	60 hrs	63 hrs
5.	Actual time worked	45 hrs	50 hrs
6.	Bonus hours	15 hrs	13 hrs
7.	Amount of bonus	50 (15 x 5 x 2/3)	52 (13 x 6 x 2/3)
8.	Overtime wages	20 (3 x 5 x 4/3)	68 [(4 x 6 x 4/3) + (4 x 6 x 3/2)]
9.	Basic wages	210 (42 x 5)	252 (42 x 6)
10.	Total wages (7 + 8 + 9)	280	372
11.	Direct wage cost of 100 saleable units.	9.15 (280 / 3060) x 100	9.84 (372 / 3780) x 100

### (B) Difference between Merit Rating and Job Evaluation

The difference between the Merit Rating and Job Evaluation are as follows:-

- Job Evaluation is the assessment of the relative worth of jobs within a business enterprise and Merit Rating is the assessment of the employees with respect to a job.
- Job Evaluation helps in establishing a rational wage and salary structure. On the other hand, Merit Rating helps in fixing fair wages for each worker in terms of his competence and performance.
- Job Evaluation brings uniformity in wages and salaries while Merit Rating aims at providing a fair rate of pay for different workers on the basis of their performance.

**4.(A) Your Company uses a historical cost systems and applies overheads on the basis of "Predetermined" rates. The following are the figures from the Trial Balance as at 30.9.2012:-**

	Dr.	Cr.
Manufacturing overheads	4,26,544	---
Manufacturing overheads-applied	---	3,65,904
Work-in-progress	1,41,480	---
Finished Goods Stock	2,30,732	---
Cost of Goods Sold	8,40,588	---

**Give two methods for the disposal of the under absorbed overheads and show the profit implications of the method. [12]**

**(B) Write a short note on Machine Hour Rate? [3]**

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**Answer:**

**(A)**

	₹
Overheads incurred	= 4,26,544
Overheads absorbed	= <u>3,65,904</u>
Under absorption	= <u>60,640</u>

The following are the 3 methods for disposing off this under absorbed overheads:

1. Transferring to the costing P & L A/c under this method, the profit will decrease by ₹ 60,640.
2. The amount may be disposed off by carrying forward to the next year. In this case, there will be no effect on profit.
3. Applying Supplementary Overhead Rate and further absorbing, which may be shown as follows. Under this method also, the profit will decrease by ₹ 60,640.

$$\begin{aligned} \text{Supplementary OH Rate} &= [60,640 / 12,12,800] \times 100 \\ &= 5\% \end{aligned}$$

₹

		Suppl. OH (5%)	Total
Work in Progress	1,41,480	7,074	1,48,554
Finished Goods	2,30,732	11,537	2,42,269
Cost of goods sold	8,40,588	42,029	8,82,617
	12,12,800	60,640	12,73,440

- (B)** The most relevant rate to be applied is the machine hour rate. This is the rate calculated by dividing the actual or budgeted overhead cost related to a machine or a group of machines by the appropriate number of machine hours. These hours could be actual hours or budgeted hours. When budgeted hours are used they are taken at average capacity at which a factory normally operates. You cannot take full capacity hours as the factory may not operate at that level and then the absorption rate may be unnecessarily fixed at a lower level. The overheads in a highly mechanised factory are mostly related to the number of hours a machine runs. Hence this is supposed to be the best method for absorbing overhead costs into the cost unit. If a machine normally runs for 2000 hours in a month and monthly overheads to be absorbed are ₹15000, then the machine hour rate will be calculated as (15000/2000) i.e. ₹7.50 per machine hour. If a job take 75 hours on that machine, then ₹562.50 (75 \* 7.5) will have to be loaded as cost of using the machine for that job.

**5.(A) X Ltd. Provides you the following figures for the year 2010-11:**

	₹
<b>Direct Material</b>	<b>3,20,000</b>
<b>Direct Wages</b>	<b>8,00,000</b>
<b>Production Overheads (25% variable)</b>	<b>4,80,000</b>
<b>Administration Overheads (75% Fixed)</b>	<b>1,60,000</b>
<b>Selling and Distribution Overheads (2/3<sup>rd</sup> Fixed)</b>	<b>2,40,000</b>
<b>Sales @ 125 per unit</b>	<b>25,00,000</b>

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For the year 2011-12, it is estimated that:

1. Output and sales quantity will increase by 20% by incurring additional advertisement expenses of ₹45,200.
2. Material prices will go up 10%.
3. Wage Rate will go up by 5% along with, increase in overall direct labour efficiency by 12%.
4. Variable overheads will increase by 5%.
5. Fixed production overheads will increase by 33 1/3 %

Required:

(a) Calculate the Cost of Sales for the year 2010-2011 and 2011-2012

(b) Find out the new selling price for the year 2011-2012, if the same amount of profit is to be earned as in 2010-2011. [5+5=10]

**(B) What are the Limitations of Cost Accounting Systems**

**[5]**

**Answer:**

**(A)**

**(a) Statement showing the Cost of Sales**

₹			
	Particulars	For 20000 units	For 24000 units
<b>A.</b>	Direct Materials	3,20,000	4,22,400 [₹3,20,000 × 110% × 120%]
<b>B.</b>	Direct wages	8,00,000	9,00,000 [₹ 8,00,000 × (105/100) × (100/112) × 120%]
<b>C.</b>	Prime Cost	11,20,000	13,22,400
<b>D.</b>	Add: Production Overheads		
	Variable Production Overheads	1,20,000 [₹ 4,80,000 × 25%]	1,51,200 [₹1,20,000 × 105% × 120%]
	Fixed Production Overheads	3,60,000 [₹ 4,80,000 × 75%]	4,80,000 [₹ 3,60,000 × 133%]
<b>E.</b>	Works Cost (C + D)	16,00,000	19,53,600
<b>F.</b>	Add: Administration Overheads		
	Variable Admn. Overheads	40,000	50,400 [₹ 40,000 × 105% × 120%]
	Fixed Admn. Overheads	1,20,000	1,20,000
<b>G.</b>	Cost of Goods Produced	17,60,000	21,24,000
<b>H.</b>	Add: Selling and Distribution Overheads		
	Variable Selling & Distribution OHs	80,000	1,00,800 [₹ 80,000 × 105% × 120%]



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	Fixed Selling & Distribution OHs	1,60,000	1,60,000
	Additional Advertisement Exp.		45,200
<b>I.</b>	<b>Cost of Sales [G + H]</b>	<b>20,00,000</b>	<b>24,30,000</b>

(b) New Selling Price = (₹ 24,30,000 + ₹ 5,00,000)/24,000 units = ₹ 122.08

(B) Like any other system of accounting, Cost Accountancy is not an exact science but an art which has developed through theories and accounting practices based on reasoning and commonsense. Many of the theories cannot be proved nor can they be disproved. They grownup in course of time to become conventions and accepted principles of Cost Accounting. These principles are by no means static, they are changing from day to day and what is correct today may not hold true in the circumstances tomorrow.

Large number of Conventions, Estimates and Flexible factors: No cost can be said to be exact as they incorporate a large number of conventions, estimations and flexible factors such as:-

- Classification of costs into its elements.
- Materials issue pricing based on average or standard costs.
- Apportionment of overhead expenses and their allocation to cost units/centres.
- Arbitrary allocation of joint costs.
- Division of overheads into fixed and variable.

Cost Accounting lacks the uniform procedures and formats in preparing the cost information of a product/service. Keeping in view this limitation, all Cost Accounting results can be taken as mere estimates.

### Sec-C

**Answer any two Questions from Q. No 6, 7 and 8. Each Question carries 15 Marks**

**6.(A) The balance Sheets of a company as on 31<sup>st</sup> March, 2008 and 2009 are given below:**

Liabilities	31.03.08	31.03.09	Assets	31.03.08	31.03.09
<b>Equity share capital</b>	<b>14,40,000</b>	<b>19,20,000</b>	<b>Fixed Assets</b>	<b>38,40,000</b>	<b>45,60,000</b>
<b>Capital Reserve</b>	....	<b>48,000</b>	<b>Less: Depreciation</b>	<b>(11,04,000)</b>	<b>(13,92,000)</b>
				<b>27,36,000</b>	<b>31,68,000</b>
<b>General Reserve</b>	<b>8,16,000</b>	<b>9,60,000</b>	<b>Investment</b>	<b>4,80,000</b>	<b>3,84,000</b>
<b>Profit &amp; Loss a/c</b>	<b>2,88,000</b>	<b>3,60,000</b>	<b>Sundry Debtors</b>	<b>12,00,000</b>	<b>14,00,000</b>
<b>9% debentures</b>	<b>9,60,000</b>	<b>6,72,000</b>	<b>Stock</b>	<b>1,40,000</b>	<b>1,84,000</b>
<b>Sundry Creditors</b>	<b>5,50,000</b>	<b>5,90,000</b>			
<b>Bills Payable</b>	<b>26,000</b>	<b>34,000</b>	<b>Cash in hand</b>	<b>4,000</b>	.....
<b>Proposed Dividend</b>	<b>1,44,000</b>	<b>1,72,800</b>	<b>Preliminary</b>	<b>96,000</b>	<b>48,000</b>
<b>Provision for tax</b>	<b>4,32,000</b>	<b>4,08,000</b>			
<b>Unclaimed dividend</b>	....	<b>19,200</b>			
	<b>46,56,000</b>	<b>51,84,000</b>		<b>46,56,000</b>	<b>51,84,000</b>

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**Additional Information:**

During the year ended 31st March, 2009 the Company

1. Sold a machine for ₹1,20,000; the cost of machine was ₹2,40,000 and depreciation provided on it was ₹84,000.
2. Provided ₹4,20,000 as depreciation on fixed assets.
3. Sold some investment and profit credited to capital reserve.
4. Redeemed 30% of the debenture @105.
5. Decided to write off fixed assets costing ₹60,000 on which depreciation amounting to ₹48,000 has been provided.

You are required to prepare Cash flow statement as per AS-3. [12]

**(B) What is the significance of Ratio Analysis?** [3]

**Answer:**

**(A) Cash Flow Statement for the year ending 31st March, 2009**

	Particulars	(₹)	(₹)
<b>A</b>	<b>Cash Flows from Operating Activities</b>		
	Profit and Loss A/c (3,60,000 – 2,88,000)		72,000
	Adjustments:		
	Increase in General Reserve	1,44,000	
	Depreciation	4,20,000	
	Provision for Tax	4,08,000	
	Loss on Sale of Machine	36,000	
	Premium on Redemption of Debentures	14,400	
	Proposed Dividend	1,72,800	
	Preliminary Expenses written off	48,000	
	Fixed Assets written off	12,000	
	Interest on Debentures	60,480	13,15,680
	Funds from Operations		13,87,680
	Increase in Sundry Creditors	40,000	
	Increase in Bills Payable	8,000	
		48,000	
	Increase in Sundry Debtors	(2,00,000)	
	Increase in Stock	(44,000)	(1,96,000)
	Cash before tax		11,91,680
	Less: Tax paid		4,32,000
	<b>Cash in flows from Operating Activities</b>		<b>7,59,680</b>
<b>B</b>	<b>Cash in flows from Investing Activities</b>		
	Purchase of Fixed Assets	(10,20,000)	
	Sale of Investment	1,44,000	
	Sale of Fixed Assets	1,20,000	

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	<b>Cash out flows from Investing Activities</b>		<b>(7,56,000)</b>
<b>C</b>	<b>Cash Flows from Financing Activities</b>		
	Issue of share capital	4,80,000	
	Redemption of Debentures	(3,02,400)	
	Dividend Paid (1,44,000 – 19,200)	(1,24,800)	
	Interest on Debentures	(60,480)	
	Cash outflow from Financing Activities		(7,680)
	Net Increase in Cash and Cash Equivalents		(4,000)
	Cash and Cash Equivalents at the beginning of the year		4,000
	Cash and Cash Equivalents at the end of the year		Nil

- It is presumed that the 30 percent debentures have been redeemed at the beginning of the year.

<b>Dr.</b>	<b>Fixed Assets Account</b>	<b>Cr.</b>
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Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	27,36,000	By Cash	1,20,000
To Purchases (balance figure)	10,20,000	By Loss on sales	36,000
		By Depreciation	4,20,000
		By Assets written off	12,000
		By Balance c/d	31,68,000
	<b>37,56,000</b>		<b>37,56,000</b>

### (B) Significance of Ratio Analysis:

- Commercial bankers and trade creditors and the institutional lenders are mostly concerned with the ability of a borrowing enterprise to meet its financial obligations timely. As a result they are most interested in ratios like the current ratio, acid test ratio, turnover of receivables, inventory turnover, coverage of interest by level of earnings, etc.
- Long-term creditors would be interested in the working capital position of the borrower as an indication of ability to pay interest and principle in case earnings decline. So, they are interested in the ratios of total debt to equity, net worth to total assets, long-term debt to equity, long term debt to net working capital, fixed assets to networth, fixed assets to long term debt, fixed debt to capitalization etc. The number of times fixed charges are covered by earnings before interest and taxes will be of particular interest for such long-term creditors.
- Investors in shares are primarily interested in per share ratio like earnings per share, book value per share, market price per share, dividends per share, etc. They would also be interested in knowing the capitalization rate (E/P Ratio = Earnings per share/ Price per share ratio) which is the reciprocal of P/E Ratio (Price/ Earnings ratio) and also the dividend yield, i.e.; D/P Ratio.

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7.(A) From the following data, compute the duration of the operating cycle for each of years:

	Year1	Year 2
<b>Stock:</b>		
Raw materials	20,000	27,000
Work-in-progress	14,000	18,000
Finished goods	21,000	24,000
Purchases	96,000	1,35,000
Cost of goods sold	1,40,000	1,80,000
Sales	1,60,000	2,00,000
Debtors	32,000	50,000
Creditors	16,000	18,000

Assume 360 days per year for computational purposes.

[8]

(B) United Industries Ltd. has an investment budget of ₹100 lakhs for 2005-06. It has short listed two projects A and B after completing the market and technical appraisals. The management wants to complete the financial appraisal before making the investment. Further particulars regarding the two projects are given below:

Particulars	(₹lakhs)	
	A	B
Investment required	100	90
Average annual cash inflow before depreciation and tax (estimate)	28	24

Salvage value: Nil for both projects. Estimate life – 10 years for both projects.

The company follows straight line method of charging depreciation. Its tax rate is 50%.

You are required to calculate the NPV for the 2 projects with a cost of Capital of 12%.

Note: P.V of an annuity of Re. 1 for ten years at different discount rate is given below:

Rate %		10	11	12	13	14
Annuity Value of return	6.1446	5.8992	5.6502	5.462	5.2161	5.01

[7]

Answer:

(A)

### Calculation of operating cycle

	Year 1	Year 2
<b>Current Assets:</b>		
1.Raw material stock = Stock of raw material/ Purchase x 360	$(20 / 96) \times 360$ = 75 days	$(27 / 135) \times 360$ = 72 days
2. WIP turnover = (WIP / COGS ) x 360	$(14 / 140) \times 360$ = 36 days	$(18 / 180) \times 360$ = 36 days
3.Finished goods turnover = (Finished good/COGS)x360	$(21 / 140) \times 360$ = 54 days	$(24 / 180) \times 360$ = 48 days
4.Debtors turnover = (Debtors / Sales) x 360	$(32 / 160) \times 360$ = 72 days	$(50 / 200) \times 360$ = 90 days
<b>Total (A)</b>	237 days	246 days

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Creditors period = (Creditors / Purchases) x 360	(16 / 96) x 360 = 60 days	(18 / 135) x 360 = 48 days
<b>Total (B)</b>	60 days	48 days
<b>Operating cycle (A-B)</b>	177 days	198 days

### (B) Calculation of NPV of the two project

Particulars	Project A	Project B
Av. Annual cash inflow before depreciation and tax	28	24
Less: Depreciation	10	9
EBT	18	15
Less: Tax @ 50%	9	7.5
PAT	9	7.5
Add: Depreciation	10	9
Cash inflow after tax	19	16.5
NPV at 12% cost of capital	19 x 5.462 = 103.778	16.5 x 5.462 = 90.123
Less: Initial investment	100.000	90.000
Net present Value	3.778	0.123
As Project A has more NPV than Project B so, accept the Project A.		

**8.(A) Aries Limited wishes to raise additional finance of ₹10 lacs for meeting its investment Plans. It has ₹2,10,000 in the form of retained earnings available for investment purposes. The following are the further details:**

- |                                     |  |
|-------------------------------------|--|
| 1. Debt/equity mix                  | 30% / 70%  |
| 2. Cost of debt upto ₹1,80,000      | 10% (before tax) beyond ₹1,80,000<br>16%(before tax) |
| 3. Earnings per share               | ₹4   |
| 4. Dividend pay out                 | 50% of earnings                                      |
| 5. Expected growth rate in dividend | 10%  |
| 6. Current market price per share   | ₹44  |
| 7. Tax rate                         | 50%  |

You are required to:

- a) To determine the pattern for raising the additional finance.
- b) To determine the post-tax average cost of additional debt.
- c) To determine the cost of retained earnings and cost of equity, and
- d) Compute the overall weighted average after tax cost of additional finance.

[10]

**(B) A firm has Sales of ₹40 lakhs; Variable cost of ₹25 lakhs; Fixed cost of ₹6 lakhs, 10% debt of ₹30 lakhs; and Equity Capital of ₹45 lakhs. You are required: Calculate operating and financial leverage?**

[5]

**Answer:**

**(A)**

**a) Determination of pattern for raising additional finance:**

Total additional finance required = ₹10,00,000

Debt Equity mix = 30:70

Therefore

Additional Debt = 10,00,000 x 30% = ₹3,00,000

Additional Equity = 10,00,000 x 70% = ₹7,00,000

## Answer to MTP\_Intermediate\_Syllabus 2012\_Dec 2016\_Set 1

Detailed pattern

Total equity:	₹	₹
Retained earnings	2,10,000	
Equity share Capital	4,90,000	7,00,000
Debt:		
10% debt	1,80,000	
16% debt	1,20,000	3,00,000
Total Additional finance		10,00,000

**b) Calculation of Average Cost of additional debt:**

Post Tax Cost of 10% debt =  $10\% (1 - 0.5) = 5\%$

Post Tax Cost of 16% debt =  $16\% (1 - 0.5) = 8\%$

Average cost (after tax) of total debt =  $5\% \times 1.8 + 8\% \times 1.2 = 6.2\%$

**c) Computation of Cost of equity and cost of retained earnings:**

Cost of equity ( $K_e$ ) =

=  $10\% + 0.10 \times 15\% = 15\%$

**Cost of Retained Earnings ( $K_r$ )**

$K_r = K_e$  (as there is no flotation cost)

$K_r = 15\%$

**d) Calculation of Weighted Cost of Capital**

Element	Amount (₹)	Weight	Specific Cost	Overall cost
Equity Share Capital	4,90,000	0.49	0.15	0.0735
Reserves	2,10,000	0.21	0.15	0.0315
10% Debt	1,80,000	0.18	0.05	0.0090
16% Debt	1,20,000	0.12	0.08	0.0096
<b>Total</b>	<b>10,00,000</b>	<b>1.00</b>		<b>0.1236</b>

**WACC = 12.36%**

**(B) Calculation of operating and financial leverage?**

		(₹ In Lakhs)
I	Sales	40
II	Variable Cost	25
III	Contribution (I – II)	15
IV	Fixed Cost	6
V	EBIT	9
VI	Interest (10% on 30 lakhs)	3
VII	EBT	6
Operating Leverage = $C / EBIT$		$15 / 9 = 1.66$
Financial Leverage = $EBIT / EBT$		$9 / 6 = 1.5$

