INTERMEDIATE EXAMINATION
GROUP I
(SYLLABUS 2012)

SUGGESTED ANSWERS TO QUESTIONS

JUNE 2015

Paper- 8: COST ACCOUNTING AND FINANCIAL MANAGEMENT

Time Allowed : 3 Hours **Full Marks : 100**

The figures in the margin on the right side indicate full marks.

All questions are compulsory, subject to internal choice as per instruction provided against each question.

All working must form part of the answer.

Wherever necessary, candidates may make assumptions and clearly state them in the answer.

No Present value factor table or other table will be provided along with this question paper.

I. Answer all sub-divisions. **2×10=20**

(a) Calculate the variable overhead per hour and the amount of fixed overheads from the following information:

Activity level (Hours)	Total Budgeted overhead (₹)
21,000	1,25,000
28,000	1,53,000

(b) Direct materials and direct labour cost of job No. 111 are ₹760 and ₹550 respectively. Overheads are charged @ 60% of direct labour. If the profit is included @ 20% of the price charged to customer, then calculate the price of job No. 111.

(c) Ascertain the future value of annuity of ₹25,000 at the end of 6 years at 9% p.a. compounded annually. Assume that the amount is deposited at the beginning of every year.

(d) Average collection period is 2 months, Cash sales and average receivables are ₹5,00,000 and ₹6,50,000 respectively. Find the amount of total sales.

(e) Toli Ltd. earned a contribution of ₹50 per unit on 65,000 units sold. Company's debt is ₹30,00,000 at 12% rate of interest and Fixed Costs are ₹7,50,000. Calculate the Financial Leverage.

(f) Determine which company is more profitable

	A. Ltd.	B. Ltd.
Net Profit ratio	5%	8%
Turnover ratio	6 times	3 times

(g) Cost of a machine is ₹30,000. Estimated scrap value at the end of 10 years ₹6,000. Running hours of the machine 24,000 p.a. Find out the depreciation per hour.

(h) Mr. X expects to receive ₹2,00,000 at the end of three years. What would be the present value if the rate of discount is 10%?

(i) In a factory, a worker produced 14 units in a day of 8 hours. Wage rate per hour is ₹40. Standard output per hour is 2 units. Under differential piece rate system, a worker is paid at 83% when his performance is below standard and 125% of piece rate when his performance is at or above standard. Find out the labour cost of the worker for the day.

(j) The number of employees at the beginning and end of year 2014 was 380 and 420. During the year,18 employees resigned, 6 were terminated and there were 16 replacements. Find the Labour Turnover ratio under the Flux Method.

Answer: I.

(a) Variable overhead per hour

$$= \frac{(1,53,000-1,25,000)}{(28,000-21,000)} = \frac{28,000}{7,000} = ₹4 \text{ per hour}$$

Fixed overhead = 1,25,000 – (21,000 × 4) = ₹41,000

(b)

	₹
Direct Material	760
Direct labour	550
Overhead @ 60% of Labour	330
Cost of job	1,640
Add: Profit @ 20% on Selling Price or 25% on cost	410
Price Charged to Customer	2,050

(c) Calculation of Future value of annuity

Year	Annuity Amount ₹	Future value of ₹1 ₹	Future value ₹
1	25,000	1,677	41,925
2	25,000	1,539	38,475
3	25,000	1,412	35,300
4	25,000	1,295	32,375
5	25,000	1,188	29,700
6	25,000	1,090	27,250
Future value of annuity at the end of 6th year			2,05,025

Or

Amount of annuity × Cumulative future value of ₹1 for six years.

₹25,000 × 8,201 = ₹2,05,025

(d) Avg. Collection Period = $\frac{\text{Avg.Receivables}}{\frac{\text{Net credit sales}}{12}} = \frac{₹\,6,50,000}{\frac{\text{NetCredit sales}}{12}} = 2$

Or Net credit sales = $\frac{(6,50,000 \times 12)}{2}$ = ₹39,00,000

Total Sales = Cash + Credit = 5,00,000 + 39,00,000 = ₹44,00,000

(e)

	₹
Contribution (65,000 × 50)	32,50,000
Less: Fixed Cost	7,50,000
EBIT	25,00,000
Less: Interest (30,00,000 ×12%)	3,60,000
EBT	21,40,000

Financial Leverage = $\frac{\text{EBIT}}{\text{EBT}} = \frac{25,00,000}{21,40,000} = 1.1682$

(f) Company A is more profitable as it has higher return on capital (30%). Company B has lower- return on capital (24%).

(g) Depreciation per year = 30,000 - 6,000/10=24,000/10 = ₹2,400.
Depreciation per hour = 2,400 / 24,000 = ₹ 0.10.

(h) Present value factor for 3 years at 10% is 0.751

Present value = 2,00,000 × 0.751 = ₹1,50,200.

(i) Standard production per day = 8 × 2 = 16 units.

Efficiency of the worker = 87.5%. It is less than 100%. Hence he is paid at low piece rate.
Earnings = 14 × 20 × 83% = ₹ 232.4.

(j) Addition = 420 – (380 – 18 – 6) = 64, replacement = 16;

LTR (Flux) = 0.5 *(64+16)/400 = 10%

II. Answer *any three* sub-divisions from (a) to (d): 16×3=48

(a) (i) Naitik Limited produces a product which has a weekly demand of 2,500 units. The product requires 5 kg. material for every finished unit of product. Material is purchased at ₹104 per unit. The ordering cost is ₹200 per order and the carrying cost is 10% per annum.

(1) Calculate Economic order Quantity.

(2) Should the company accept an offer of 3% discount by the supplier who wants to supply the annual requirement of the material in five equal installments? 3+5=8

(ii) Two workmen, Gyani and Jeetu, produce the same product using the same material. Their normal wage rate is also the same. Gyani is paid bonus according to the Halsey System, while Jeetu is paid bonus according to the Rowan System. The time allowed to make the product is 40 hours. Gyani takes 25 hours while Jeetu takes 32 hours to complete the product. The factory overheads are charged @ 125% of direct labour cost. The factory cost for the product for Gyani is ₹8,925 and for Jeetu it is ₹9,456. You are required to:
You are required to:

(1) find the normal rate of wages;
(2) find the cost of materials;
(3) Prepare a statement comparing the elementwise factory cost of the products as made by the two workmen. 2+2+4=8

Answer II :

(a) (i) Annual demand of material = 2,500 units × 52 weeks × 5 kgs.
= 6,50,000 kgs.

Calculation of EOQ for a material: $EOQ = \sqrt{\frac{2 \times \text{Annual Demand} \times \text{Ordering Cost}}{\text{Carying Cost per unit per annum}}}$

$$EOQ = \sqrt{\frac{2 \times 6,50,000 \times 200}{104 \times 10\%}}$$

= 5,000 kgs.

Evaluation of discount offer:
If lot size is at EOQ 5,000 kgs.

	₹
Ordering Cost $= \frac{6,50,000}{5,000} = 130 \times 200 = 26,000$	26,000
Carrying Cost $= \frac{5,000}{2} = 2,500$ units × 10.4 = 26,000	26,000
Material Cost = 6,50,000 kgs @₹104	6,76,00,000
Total Cost	6,76,52,000

If lot size is at discount offer $\frac{6,50,000}{5}$ = 1,30,000 kgs.
Offer price = ₹100.88

	₹
Ordering Cost = 5 orders × 200 = 1,000	1,000
Carrying Cost = $\frac{1,30,000}{2}$ × (100.88 × 10%) = 65,000 × 10.088 =	6,55,720
Material Cost = 6,50,000 kgs × ₹100.88	6,55,72,000
Total Cost	6,62,28,720

Advice:- Total cost is less in case of 3% discount offer Net Sharing = 6,76,52,000 – 6,62,28,720 = `14,23,280
Hence, the company should accept the offer.

(a) (ii) Let 'x' be the material cost and 'y' be the wages rate.
Earnings of Gyani under Halsey Plan:

	₹
Normal wages = 25 × `y	25y
Bonus = 40 – 25 = 15 × `y × 50%	7.5y
Total Earnings	32.5y

Earrings of Jeetu under Rowan Plan:

	₹
Normal wages = 32 × y	32y
Bonus = $\frac{32 \times 8}{40} \times y$	6.4y
Total Earnings	38.4y

Factory Cost = Material + Wages + Factory overheads
In case Gyani: 8,925 = x + 32.5y + 125% of 32.5y
Or, x + 32.5 y + 40.625y = 8,925
Or, x + 73.125 y = 8,925 ……(1)

In case of Jeetu:- x + 38.4y + 125% of 38.4y = 9,456

Or, x + 38.4y + 48y = 9,456

Or, x + 86.4y = 9,456 ……..(2)

Solving equation (1) & (2)

x + 86.4y = 9,456 ……(2)

_ x + _ 73.125y =_ 8,925 ……(1)

13.275y = 531

Or, y = 40

x + 86.4 × 40 = 9,456

Or, x = 9,456 – 3,456

Or, x = 6,000

Hence,

(a) Normal rate of wages (y) = ₹40 per hour

(b) Cost of material (x) = ₹6,000

(c) Statement of factory Cost

Particulars	Gyani ₹	Jeetu ₹
Material Cost	6,000	6,000
Wages : Gyani (25 × 40) + [(40 – 25) × 40 × 50%]	1,300	-
Jeetu: (32 × 40) + $\left[\frac{32\times(40-32)}{40}\times 40\right]$	-	1,536
Factory overhead @ 125% of wages	1,625	1,920
Factory Cost	8,925	9,456

(b) (i) The total available working hours in a month in respect of a machine is 200 hours.

The idle-time card reveals follows:

Tea break	**20 hours**
Waiting for job	**10 hours**
Waiting for tools	**6 hours**
Break down (major)	**10 hours**

Report the idle-time cost to the management under the appropriate category if hourly fixed costs of the machine amount to ₹4.25 and the operator is paid ₹0.75 per hour. 6

(ii) Compute total direct expenses of product X from the following information, giving appropriate explanatory notes:

Particulars	Figures
Production (Units)	**20,000**
Sales (Units)	**16,000**
Labour hours	**10,000**
Labour rate per hour ₹	**8**
Royalty per unit of sale ₹	**2**
Royalty per unit of production ₹	**1**
Design Charges ₹	**12,000**
Interest on loan for purchase of machine ₹	**5,000**
Hire charges of equipment used for manufacturing product Y ₹	**6,000**
Penalty for violating Patent ₹	**4,000**

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(iii) Compute the Employee Cost as per CAS – 7 with appropriate reasoning:

Extract of Trial Balance as on 31-03-2015

Particulars (Debit)	Amount (₹)	Particulars (Credit)	Amount (₹)
Materials consumed	**30,00,000**	**Special subsidy received from Government towards employee salary**	**3,50,000**
Salaries	**18,00,000**	**Recoverable amount from employees out of perquisites extended**	**80,000**
Employee training cost	**3,00,000**		
Perquisites to employees	**4,80,000**		
Contribution to gratuity fund	**4,20,000**		
Lease rent for accommodation provided to employees	**5,60,000**		
Festival bonus	**1,00,000**		

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Answer II.

(b) (i)

Total available working hours	200
Capacity usage ratio	90%
Standard capacity expected = 90% of 200	180 hours
Unavoidable idle time	20 hrs
Capacity utilization ratio	80%
Actual hours worked $\frac{180\times80}{100}$	144 hours
Idle time card reveals:	
Waiting for material (a)	10 hours
Waiting for tools (b)	6 hours
Break down (c)	10 hours
Total (a+b+c)	26 hours
Avoidable idle time is 36 – 26 = 10 hours	
Hourly idle time cost:	
Fixed expenses for machine	₹4.25
Operator's hourly wages	₹0.75
	₹5.00

Idle Time Report

Unavoidable	Avoidable				Cost @ ₹5	
Idle time	W.T	W,M	B.D	Idle Time	Unavoidable	Avoidable
20 hours	6	10	10	10 (Hrs.)	₹100	₹180 (36 × 15)

(b) (ii) Computation of Direct Expenses

Particulars	Product X (₹)
Royalty paid on sales	32,000
Royalty paid on units produced	20,000
Design Charges	12,000

Hire charges of equipment used for manufacturing Product Y	6,000
Direct Expenses	70,000

(b) (ii) Computation of Employee Cost as per CAS – 7

	Particulars	Amount ₹
	Salaries	18,00,000
Add	Net cost of Perquisites to employees (4,80,000 – 80,000)	4,00,000
Add	Contribution to gratuity fund	4,20,000
Add	Lease rent for accommodation provided to employees	5,60,000
Add	Festival Bonus	1,00,000
		32,80,000
Less	Special subsidy received from Government towards Employee Salary	3,50,000
	Employee Cost as per CAS – 7	29,30,000

(c) (i) The Cost structure of an article, the selling price of which is ₹60,000 is as follows:

Direct Materials	**50%**
Direct Labour	**20%**
overhead	**30%**

An increase of 15% in the cost of materials and of 25% in the cost of labour is anticipated. Assume no change in overhead.
This increased cost in relation to the present selling price would cause a 25% decrease in the amount of present profit per article.

(1) Prepare a statement of profit per article at present.

(2) Find the revised selling price to produce the same percentage of profit to sales as before.

5+3=8

(ii) A company has three manufacturing departments A, B and C and one service department S. The following figures are available for one month of 25 working days of 8 hours each day. All these departments work on all the days.

Description	Total	Departments			
		S	A	B	C
Power and Lighting (₹)	1,100	240	200	300	360
Supervisor's Salary (₹)	2,000	-	-	-	-
Rent (₹)	500	-	-	-	-
Welfare (₹)	600	-	-	-	-
Other Expenses (₹)	1,200	200	200	400	400
Total (₹)	5,400				
Supervisor's Salary		20%	30%	30%	20%
Number of Workers		10	30	40	20
Floor area (in sq. ft)		500	600	800	600
Service rendered by Service Department		50%	30%	20%	

Calculate labour hour rate for each of A, B and C. **8**

Answer II.

(c) (i) Let 'x' be the total cost and 'y' be the profit for an article whose selling price is `60,000

x + y = `60,000

Elements	Present Cost	Increase	Anticipated cost
Direct material	0.5x	15 % 0.075x	0.575x
Direct labour	0.2x	25% 0.050x	0.250x
Overheads	0.3x	-	0.300x
Total	x	0.125x	1.125x

1.125x + 0.75y = 60,000

By solving the above two equations.

x = ₹40,000; y = ₹20,000

Statement of Profit per article		₹
Direct Material	0.5 of ₹40,000	20,000
Direct labour	0.2 of ₹40,000	8,000
Overhead	0.3 of ₹40,000	12,000
Total Cost		40,000
Add: Profit		20,000
Selling Price		60,000

Statement of required selling price:

Direct Material (0.575 of 40,000)	23,000
Direct Labour (0.250 of 40,000)	10,000
Overhead (0.300 of 40,000)	12,000
Total cost	45,000
Add: Anticipated profit	22,500
Selling price	67,500

(c) (ii) **Calculation of labour Hour rate**

Particulars	Basis	Total ₹	A ₹	B ₹	C ₹	S ₹
Power and Lightning	(Given)	1,100	200	300	360	240
Supervisor's salary	(Given)	2,000	600	600	400	400
Rent	(Area)	500	120	160	120	100
Welfare	(No. of workers)	600	180	240	120	60
Other Expenses	(Given)	1,200	200	400	400	200
Total		5,400	1,300	1,700	1,400	1,000
Add: Reapportionment of S			500	300	200	-1,000
Total Expenses		5,400	1,800	2,000	1,600	-
No. of. Direct labour hours			6,000	8,000	4,000	
Rate per hour			₹0.30	₹0.25	₹0.40	
No. of. Working days = 25						
No. of working hours per month: A		= 25 × 8 × 30 = 6,000				
B		= 25 × 8 × 40 = 8,000				
C		= 25 × 8 × 20 = 4,000				

The computation of the total cost for each dept. will remain unaltered. Thereafter, depending on the students' assumption, any of the following situations could arise.

Alternative I:

(Where students assume Question paper is rightly printed and consider A: 30%, B: 20% and C: Nil and 50% of service Dept. cost is not apportioned among the production depts. for some reason and directly charged to the Profit and Loss a/c)

	TOTAL	A	B	C	D
Total	5,400	1,300	1,700	1,400	1,000
Allocated OH of Service Dept		300	200	0	-500
Total Expenses	5,400	1,600	1,900	1,400	500
No. of direct labour house	18,000	6,000	8,000	4,000	
Rate /hr (`)	0.3	0.266667	0.2375	0.35	
Rounded off to	0.3	0.27	0.24	0.35	

Alternative II:

(where students assume misalignment in the Question paper and considered :- A: 50%, B: 30% and C: 20%)

	TOTAL	A	B	C	S
Total	5,400	1,300	1,700	1,400	1,000
Allocated OH of Service Dept		500	300	200	-1,000
Total Expenses	5,400	1,800	2,000	1,600	0
No. of direct labour house	18,000	6,000	8,000	4,000	
Rate /hr (₹)	0.3	0.3	0.25	0.4	
Rounded off to	0.3	0.3	0.25	0.4	

Alternative III:

Where students assume misalignment in the Question paper and considered (A: 30%, B: 20% and C: 50%)

	TOTAL	A	B	C	D
Total	5,400	1,300	1,700	1,400	1,000
Allocated OH of Service Dept		300	200	500	-1,000
Total Expenses	5,400	1,600	1,900	1,900	0
No. of direct labour house	18,000	6,000	8,000	4,000	
Rate/Hr (₹)	0.3	0.266667	0.2375	0.475	
Round off to	0.3	0.27	0.24	0.48	

(d) (i) Mahi Transport Company operates a Luxury bus, which runs between Delhi to Jaipur and back for 10 days in a month. The distance from Delhi to Jaipur is 270

kms. The bus completes the trip from Delhi to Jaipur and comes back on the same day. The bus goes on a Delhi- Agra trip for 10 days in a month. The distance from Delhi to Agra is 180 kms. This trip is also completed on the same day. For 4 days of its operation in a month it runs in the local city. Daily distance covered in the city is 65 kms. The other information is given below:

Particulars	Amount (₹)
Cost of Bus	₹15,00,000
Depreciation	15% per annum
Salary of Driver	₹9,000 per month
Salary of Conductor	₹8,000 per month
Salary of Part time Accountant	₹4,500 per month
Insurance	₹10,800 per quarter
Diesel	₹49 per litre
Distance covered per litre	5 kms.
Token Tax	₹8,100 per quarter
Lubricant oil	₹300 per 100 kms.
Repairs and Maintenance	₹8,000 per month
Permit Fee	₹13,050 per quarter
Normal capacity	50 persons

The bus is generally occupied 90% of the capacity when it goes to jaipur and 80% when it goes to Agra. It is always full when it runs within the city. Passenger tax is 25% of the fare.
Calculate the rate the company should charge a passenger when it wants to earn a profit of $33\frac{1}{3}\%$ on its revenue. 12

(ii) A trading company starts its operation on 01-01-2014. Its stock register reveals the following data regarding the purchase of goods in 2014:

January to March	-	**10,000 units @ ₹10 each**
April to June	-	**12,500 units @ ₹14 each**
July to September	-	**7,500 units @ ₹16 each**
October to December	-	**15,000 units @ ₹17 each**

The company sells 27,500 units by 31st December 2014. Value the closing stock by FIFO and LIFO methods and also find the cost of goods sold under each method. 4

Answer II:

(d) (i) Calculation of Passenger Kms.

		Pass-Kms
Jaipur Trip	10 × 540 × 50 × 90%	2,43,000
Agra Trip	10 × 360 × 50 × 80%	1,44,000
Local City	4 × 65 × 50	13,000
Total Passenger kms.		4,00,000

Total distance covered in the Month:

		Pass-Kms
Jaipur	10 × 270 × 2	5,400
Agra	10 × 180 × 2	3,600
Local	4 × 65	260
Total		9,260

Operating Cost Sheet

Total Passenger kms: 4,00,000

Fixed Expenses:	₹	₹
Salary of Driver	9,000	
Salary of Conductor	8,000	
Salary of Accountant	4,500	
Depreciation (15,00,000 × 15% × 1/12)	18,750	
Insurance (10,800/3)	3,600	
Token Tax (8,100/3)	2,700	
Permit Fees (13,050/3)	4,350	
Total Fixed expenses		50,900
Variable Expenses:		
Diesel $\frac{9,260}{5} \times 49$		90,748
Lubricant Oil $\left[9,260 \times \frac{300}{100}\right]$		27,780
Repairs & Maintenance		8,000
Gross taking		1,77,428
Profit on Net takings 33 1/3 % or 50% on Total Cost		88,714
Total net Takings		2,66,142
Add:- Net Takings		66,536
Total Takings		3,32,678

Rate per Passenger km = $\frac{3,32,678}{4,00,000}$ = ₹0.832

Charges for Jaipur per Passenger : 0.832 × 270 = ₹224.64 or ₹225
Charges for Agra per Passenger: 0.832 × 180 = ₹149.76 or ₹150
Charges for Local city passenger = 0.832 × 65 = ₹54.08

(d) (ii) Calculation of closing stock

FIFO	₹	LIFO	₹
2,500 × 16	40,000	7,500 × 14	1,05,000
15,000 × 17	2,55,000	10,000 × 10	1,00,000
Total	2,95,000		2,05,000

Calculation of cost of goods sold:
FIFO method: 10,000 × 10 = 1,00,000 +12,500 × 14 = 1,75,000 +5,000 × 16 = ₹3,55,000
LIFO method: 15,000 ×17 + 7,500 ×16 + 5,000 ×14 = 2,55,000 +1,20,000 +70,000 = ₹4,45,000

III. Answer *any two Sub-divisions from (a) to (c)* **16×2=32**

(a) (i) The following information is available as on 31.03.2015:

Current Ratio	**2.7 : 1**
Current Liabilities to Net worth	**20%**
Total Debts to Net worth	**39%**
Fixed Assets to Net worth	**85%**

Sales to Net worth	**2.4 times**
Inventory to Current Assts	**1 : 3**
Average Collection Period	**1 month**
Working capital	**₹5,10,000**

Calculate the following as on 31.03.2015:

(A) Fixed assets
(B) Inventory
(C) Debtors
(D) Cash and Bank Balance (combined figure)
(E) Net worth
(F) Long term Debts
(G) Current Liabilities
(H) Total Assets **8**

(ii) List the usual forms of bank credit available in India for a business. **4**

(iii) What is Marginal Cost of capital? How is it used in decision making? **4**

Answer III:

(a) (i) Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$ = 2.7: 1

Hence, working capital = CA– CL= 2.7-1= 1.7

Current Assets = $\frac{\text{Working Capital}}{1.7} \times 2.7 = \frac{5,10,000}{1.7} \times 2.7$ = ₹8,10,000

Current Liabilities = $\frac{\text{Working Capital}}{1.7} \times 1 = \frac{5,10,000}{1.7} \times 1$ = ₹3,00,000

1. Net Worth = Current Liabilities $\times \frac{100}{20}$ = ₹3,00,000 $\times \frac{100}{20}$ = 15,00,000
2. Total Debts = 39% of Net Worth of ₹15,00,000 = ₹5,85,000

   Hence, Long term Debts = Total Debts – Current Liabilities

   = 5,85,000 – 3,00,000 = ₹2,85,000
3. Fixed Assets = Net Worth ₹15,00,000 × 85% = ₹12,75,000
4. Sales = Net Worth × 24 = 15,00,000 × 24 = ₹36,00,000
5. Debtors :

   Avg. Collection Period = $\frac{\text{Debtors}}{\text{Net Credit Sales}} \times 12$ months

   Debtors = $\frac{36,00,000 \times 1}{12}$ = ₹3,00,000
6. Inventory to Current Assets = 13

   Hence, Inventory = CA $\frac{8,10,000}{3}$ = ₹2,70,000

7. Cash and Bank = CA – Inventory – Debtors

= ₹8,10,000 – ₹2,70,000 – ₹3,00,000 = ₹2,40,000

Balance Sheet

Liabilities	Amount ₹	Assets	Amount ₹
Net worth	15,00,000	Fixed Assets	12,75,000
Long term Debts	2,85,000	Inventory	2,70,000
Current Liabilities	3,00,000	Debtors	3,00,000
		Cash & bank	2,40,000
	20,85,000		20,85,000

(a) (ii) In India banks may give financial assistance in different shapes and forms. The usual form of bank credit is as follows:

1. Overdraft
2. Cash Credit
3. Bills Purchased and Bills Discounting
4. Letter of Credit
5. Working Capital term Loan
6. Funded interest term Loan

(a) (iii) Marginal cost of Capital

The weighted average cost of capital can be worked out on the basis of marginal cost of capital than the historical costs. The weighted average cost of new or incremental capital is known as the marginal cost of capital. This concept is used in capital budgeting decisions. The marginal cost of capital is derived, when we calculate the weighted average cost of capital using the marginal weights. The marginal cost of capital would rise whenever any component cost increases. The marginal cost of capital should be used as the cut off rate. The average cost of capital should be used to evaluate the impact of the acceptance or rejection of the entire capital expenditure on the value of the firm.

(b) (i) Annu Ltd. is examining two mutually exclusive investment proposals. The management uses Net Present Value Method to evaluate new investment proposals. Depreciation is charged using Straight-line Method. Other details relating to these proposals are:

Particulars	Proposal X	Proposal Y
Annual Profit before tax (₹)	**13,00,000**	**24,50,000**
Cost of the Project (₹)	**90,00,000**	**180,00,000**
Salvage Value (₹)	**1,20,000**	**1,50,000**
Working Life	**4 years**	**5 Years**
Cost of capital	**10%**	**10%**
Corporate Tax Rate	**30%**	**30%**

The present value of ₹1 at 10% discount rates at the end of first, second, third, fourth and fifth year are 0.9091; 0.8264; 0.7513; and 0.6209 respectively.
You are required to advise the company on which proposal should be taken up by it. 8

(ii) Write short notes on: **4+4=8**

(A) Letter of credit

(B) Issue of commercial papers in India

Answer III:

(b) (i) Calculation of Annual Cash Inflow and Present Values:

Particulars	Proposal X ₹	Proposal Y ₹
Annual Profit Before Tax	13,00,000	24,50,000
Less: tax @ 30%	3,90,000	7,35,000
Annual Profit After Tax	9,10,000	17,15,000
Add: Depreciation (Annual) Proposal X : $\frac{90,00,000 - 1,20,000}{4}$ Proposal Y: $\frac{1,80,00,000 - 1,50,000}{5}$	22,20,000 -	- 35,70,000
Annual Cash inflow	31,30,000	52,85,000
P. V. of ₹1 for 1 to 4 year	3.1698	-
P. V. of ₹1 for 1 to 5 year	-	3.7907
Present value of Annual Cash Inflows	99,21,474	2,00,33,850
Add: Present value of salvage value: Proposal X: 1,20,000 × 0.683 Proposal Y: 1,50,000 × 0.6209	81,960 -	- 93,135
Total Present value	1,00,03,434	2,01,26,985
Less: Initial outflow	90,00,000	1,80,00,000
Net Present Value	10,03,434	21,26,985

Advice: Proposal Y should be accepted as it gives higher net present value.

(b) (ii) **(A) Letter of Credit**: A letter of credit is an arrangement whereby a bank helps its customer to obtain credit from it (customer's) suppliers. When a bank opens a letter of credit in favour of its customer for some specific purchases, the bank undertakes the responsibility to honour the obligation of its customer, when the customer fails to do so.

(B) Issue of Commercial Papers in India

CP was introduced as a money market instruments in India in January, 1990 with a view to enable the companies to borrow for short term. Since the CP represents an unsecured borrowing in the money market, the regulation of CP comes under the purview of the Reserve Bank of India:

(a) Cp can be issued in multiples of ₹5 lakhs.

(b) CP can be issued for a minimum duration of 15 days and maximum period of 12 months.

(c) For issuing CP the company's net worth should be more than ₹4 crores.

(d) CP can neither be redeemed before maturity nor can be extended the beyond the maturity period.

(e) CP issue requires a credit rating of P2 from CRISIL or A2 from ICRA.

(c) (i) Calculate the operating leverage and financial leverage under situations A, B and C and financial plans I, II and III respectively from the following information

relating to the operating and capital structure of ABC Co. Also find out the combination of leverages which give the highest value and the least value.

Installed capacity	**1,200 units**
Actual production and sales	**800 units**
Selling price per unit	**₹15**
Variable cost per unit	**₹10**
Fixed cost: Situation A	**₹1,000**
Situation B	**₹2,000**
Situation C	**₹3,000**

Capital Structure	Financial Plan		
	I	II	III
Equity	₹5,000	₹7,500	₹2,500
Debt	₹5,000	₹2,500	₹7,500
Cost of debt	12%	12%	12%

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(ii) A company manufactures a small computer component. The component is sold for ₹1,000 and its variable cost is ₹700. The company sold on an average, 300 units every month in 2014-15. At present the company grants one month credit to its customers. The company plans to extend the credit to 2 months on account of which the following is expected:

Increase in sales is 25%

Increase in stock is ₹1,50,000

Increase in creditors ₹60,000

Should the company extend the credit terms if

(A) All customers avail of the extended period of 2 months.

(B) Only new customers avail of 2 months credit, assuming that the increase in sales in due to new customers.

The company expects a minimum rate of return of 30% on its investment.

(Consider debtors at sales value) **5+3=8**

Answer III:

(c) (i) Determination of operating leverage

Particulars	Situation A ₹	Situation B ₹	Situation C ₹
Sales	12,000	12,000	12,000
Less:-Variable cost	8,000	8,000	8,000
Contribution	4,000	4,000	4,000
Less:-Fixed cost	1,000	2,000	3,000
Operating profit	3,000	2,000	1,000
Operating Leverage	1.33	2	4

Determination of Financial Leverage:

Particulars	Financial plan I ₹	Financial Plan II ₹	Financial Plan III ₹
Situation A:			
Operation profit	3,000	3,000	3,000
Interest	600	300	900

Profit Before Tax	2,400	2,700	2,100
Financial leverage	1.25	1.11	1.43
Situation B:			
Operation profit	2,000	2,000	2,000
Interest	600	300	900
Profit Before Tax	1,400	1,700	1,100
Financial leverage	1.43	1.18	1.82
Situation C:			
Operation profit	1,000	1,000	1,000
Interest	600	300	900
Profit Before Tax	400	700	100
Financial leverage	2.5	1.43	10

Combined operating leverage and financial leverage

Highest value Situation C and Financial Plan III 4 × 10 = 40

Lowest Value Situation A and Financial Plan II 1.33 × 1.11 = 1.476

(c) (ii) (A) **Incremental Profit – all customers:**

Particulars	Amount (₹)
Increment sales revenue 75 × 12 × 1,000	9,00,000
Less:- increased variable costs 9,00,000 × 0.70	6,30,000
Incremental contribution	2,70,000
Less:- cost of additional working capital	1,21,500
Incremental Profit	1,48,500

Workings:

(i) Present investment in debtors	300 ×12 × 700/12	₹2,10,000
(ii) Proposed investment in debtors	375 × 12 × 700/6	₹5,25,000
(iii) Additional investment in debtors	(ii) - (i)	3,15,000
Add:- increase in stock		1,50,000
Less increase in creditors		60,000
(iv) Additional working capital required		4,05,000
(v) Minimum return expected	4,05,000 × 0.30	1,21,500

(B) **Incremental Profit: New customers**

Particulars	Amount (₹)
Incremental sales revenue 75 × 12 × 1,000	9,00,000
Less:- increased variable costs 9,00,000 × 0.70	6,30,000
Incremental contribution	2,70,000
Less:- cost of addition working capital	58,500
Incremental Profit	2,11,500

Workings:

Additional investment in debtors	75 ×12 ×700/6	₹1,05,000
Add increase in stock		1,50,000
		2,55,000
Less increase in creditors		60,000
Additional working capital required		1,95,000
Minimum return expected	1,95,000 × 0.30	58,500