INTERMEDIATE EXAMINATION
GROUP – I

SYLLABUS – 2012
SUGGESTED ANSWERS TO QUESTION

DECEMBER 2013

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.

SECTION A – Cost Accounting (60 marks)

In Section A, Question No. 1 is compulsory. Answer any three out of the remaining four.

1.   Answer the following:

(a) For a department, the standard Overhead rate is ₹2.50 per hour and the overhead allowances are as follows: **2**

Activity Levels (hours)	Budgeted overhead allowances (₹)
6,000	20,000
14,000	36,000
22,000	52,000

Calculate the fixed cost.

(b) The following data relating to a machine is available:
Cost of the machine is ₹20,000; Estimated scrap value is ₹2,000. Working life = 6 years. The machine had to be discarded at the end of 4 years due to obsolescence and was sold for ₹ 4,000. What is the resultant loss? (Use straight line depreciation on net value).   **2**

(c) In a workshop the normal working hours is 8 hours for which ₹450 is paid as wages. However, calculation of wages payable is made on piece rate basis that 30 pieces will be produced per hour. When a worker produces below standard, 90% of the piece rate is paid but when he produces above standard, 110% of piece rate is paid. On a particular day, a worker produces 260 pieces in the allotted time of 8 hours. What will be his earning?   **2**

(d) Draw a specimen bin card and appropriately record the following transactions.
01-12-2013 Received from Supplier SW, 80 kg material A, Purchase Price ₹20 per kg.
04-12-2013 Issued to assembly 50 kg. of A at ₹15 per kg vide requisition No. 313.   **2**

(e) A concern producing a single product estimates the following expenses for a production period.

	Figures ₹
Direct Material	50,000
Direct Labour	50,000
Direct Expenses	5,000
Overhead Expenses	2,10,000

What will be the overhead recovery rate based on prime cost?   **2**

(f) State the cost units applicable to the following industries:
Cement, Goods Transport, Education, BPO **2**

Answer:

(a) Change in activity level = difference in hours = 14,000 – 6,000 or 22,000 -14,000 = 8,000 hours.

Change in budget allowance = 36,000 – 20,000 or 52,000 – 36,000 = 16,000.

Variable portion = $\dfrac{16,000}{8,000}$ = 2 ₹/hour.

For any level, overhead allowance - 2 x hours = fixed cost.

= 20,000 – 2 x 6,000 = 8,000 or

= 36,000 - 2 x 14,000 = 8,000 or

= 52,000 - 2 x 22,000 = 8,000.

Fixed Cost = 8,000.

Standard level of activity = $\dfrac{8,000}{(2.5 - 2)} = 16,000$

Overhead = (16,000 x 2 + 8,000) = 40,000

Standard rate = 40,000/16,000 = 2.5. (This is not asked in the question)

(b) Cost of Machine = 20,000
Less: Scrap value = 2,000
Net cost =   18,000
Life = 6 years. Depreciation per annum straight line = 3,000 p.a.
Depreciation up to year end 4 = 12,000.
Wdv at end of year 4 = 20,000 – 12,000 = 8,000.
Less: Sale value   = 4,000
Loss   = 4,000

(c) Normal price rate = 450/240 = 1.875.
Standard Production= 8hrs x 30 pieces = 240 pieces
260 pieces in 8 hours is above standard of 240 pieces.
Hence, wages = 110 % x 1.875 x 260 = 536.25 or 536.

(d)

BIN CARD							
Bin No. :					**Maximum Level :**		
Material Code No. : A					**Minimum Level:**		
Material Description :					**Re- order Level:**		
Stores Ledger Folio No :							
Unit : **Kg.**							
Receipts			**Issues**			**Balance**	**Remarks**
Date	**G.R.N. No.**	**Quantity**	**Date**	**S.R. No.**	**Quantity**	**Quantity**	
01.12.2013	-	80				80	
			04.12.2013	313	50	30	

Note:
Full form of G.R.N. No. = Goods Received Note Number.
Full form of S.R.N No. = Store Received Note Number.

(e) Prime cost = DM+DL+ DE = 1,05,000. OH = 2,10,000. Overhead recovery rate based on prime cost = 2,10,000/1,05,000 = 2 times or 200 % of prime cost.

(f) Cost units for the following industries:

Industry	Cost Unit	
Cement	Tonnes	Any unit of weight is acceptable (like quintals, kg, etc)
Goods Transport	Tonne - kilometer	Any unit that is a product of weight and length(distance) (like ton-miles, quintal-miles, etc)
Education	Student years	Any unit that is a product of no. of students and the duration - days/months or years.
BPO	Accounts handled	Any unit in terms of number of transactions, or a product of number and value of transactions

2.

(a) The following is an extract of stores ledger of a particular item of stock with incomplete information for October 2013. You are required to fill in the rate column of issues correct to two decimal places. Also fill in the values under the 'Balance column' wherever indicated with a "?". Identify the method of stock issue followed by the company. How would you treat the value of the shortages on 30th October in Cost Accounts? 8

Date	Receipts		Issues		Balance	
October 2013	Quantity (Kg)	Rate (₹/Kg)	Quantity (Kg)	Rate (₹/Kg)	Quantity (Kg)	Value (₹)
1					50,000	1,25,000
7	5,000	2.4				
10			30,000			62,000
15			20,000			
20	15,000	2.6				
25	10,000	2.5				
29			20,000			
30 shortage-abnormal loss			200			?
30 shortage-abnormal loss			400			?
31					9,400	?

(b) In a tailoring shop the standard output of a tailor making collars of a shirt is 20 units per hour for an 8 hour shift. The output of Tailor X for one week is as under:

Day	Units
Monday	150
Tuesday	160
Wednesday	180
Thursday	180
Friday	190
Saturday	200

You are required to calculate the earnings of Tailor X for the week under:

(i) Halsey Premium Plan with a guaranteed wage rate of ₹10 per hour and a premium of 60% of the time saved over standard. And 4

(ii) Taylor Differential Rate system with the following rates of payment: ₹ 0.50 per unit at standard and up to 20% over standard, ₹ 0.40 per unit at production below standard

and ₹0.60 per unit when daily output exceeds standard by 20%. **4**

Answer:

(a) Statement showing the value of closing stock

Date	Receipts		Issues		Balance	
October 13	Quantity (kg)	Rate (₹/kg)	Quantity (kg)	Rate (₹/kg)	Quantity (kg)	Value ₹
1					50,000	1,25,000
7	5,000	2.4			55,000	1,37,000
10			30,000	2.50	25,000	62,000
15			20,000	2.50	5,000	12,000
20	15,000	2.6			20,000	51,000
25	10,000	2.5			30,000	76,000
29			20,000	2.55	10,000	25,000
30 (Shortage-Normal loss)			200	2.50	9,800	24,500
30 (shortage - abnormal loss)			400	2.50	9,400	23,500
31					9,400	23,500

Working Note:

(i) The store ledger shows the value of the stock on 10.10.13 is ₹ 62,000 which shows that the store ledger is maintained in FIFO method.

(ii) On 29.10.13 the issue price is :

Quantity	Rate	Value (₹)
5,000	2.40	12,000
15,000	2.60	39,000
20,000	-	51,000

Therefore, rate of the issue : 51,000/20,000 = 2.55 **[1 mark]**

(iii) Normal Shortage is charged to production as a % of direct material consumed.
The value of normal loss to be included in material cost = 200 x 2.5 = ₹500

(iv) Abnormal Loss is to be written off to costing P& L A/c
Value of Abnormal Loss = 400 x 2.5 = ₹ 1,000

(b)

Day	Units	Extra units over standard 160 units/8 hours	Time saved (hours)	Taylor's rate applicable (.5 for units ≥160 and ≤ 192)
Monday	150			0.4
Tuesday	160			0.5
Wednesday	180	20	1	0.5
Thursday	180	20	1	0.5
Friday	190	30	1.5	0.5
Saturday	200	40	2	0.6
Premium payment for			5.5	Taylor's plan = .4 x 150 + .5 x 710 +.6 x 200

				= 535 ₹

Halsey's plan=8x6x10+5.5x6= ₹513

3.

(a) From the following information, calculate the machine hour rate for recovery of overhead for a drilling machine installed in a machine shop. **8**
  (i) The machine operates for 8 hours a day and 300 days a year.
  (ii) 400 hours of machine time in a year is used for repairs and maintenance.
  (iii) Setting up time of the machine is 200 hours per annum and is to be treated as production time.
  (iv) Annual cost of repairs and maintenance of the machine is ₹40,000.
  (v) Power used is 10 units per hour at a cost of ₹ 8 per unit. No power is consumed during repair and setting up time.
  (vi) A coolant is used to operate the machine at ₹12,000 per annum.
  (vii) An operator, whose monthly wages is ₹8,000, devotes 75% of his time exclusively to operate the machine.
  (viii) Depreciation is ₹2,40,000 per annum and insurance is ₹ 25,000 per annum.
  (ix) Other indirect expenses chargeable to the machine are ₹12,000 per month.

(b) PC Company purchases a specialized item and the quantity to be purchased is 2,500 pieces at a price of ₹ 200 per piece. Ordering cost per order is ₹ 200 and carrying cost is 2% per year of the inventory cost. Normal lead time is 20 days and safety stock is nil. Assume yearly working days as 250. **8**
  (i) Calculate the Economic Ordering Quantity.
  (ii) Re-order Inventory Level.
  (iii) If a 2% discount on price is given for order quantity 1,250 pieces or more in a lot, should the company accept the offer of discount?

Answer:

(a) Operating hours for the machine = 8 x 300 = 2,400.
  Less: Repairs and maintenance = 400
  Normal Production Time = 2,000 hours.
  Set up time = 200 hours, considered as production time. Hence no adjustment.

Item of expense	Total amount p.a. (₹)		₹/ machine hour = total amount/2,000 hours
Repairs and Maintenance	40,000	or	20
Power 10 units/ hour x ₹ 8 / unit x 1,800 hours	1,44,000	or	72
Coolant	12,000	or	6
Share of operator's wages ₹ 8,000 per month x 12 months/ year x 75 %	72,000	or	36
Depreciation and Insurance	2,40,000	or	120
	25,000	or	12.5
Other indirect expenses ₹ 12,000 p.m. x 12	1,44,000	or	72
Total	6,77,000		338.5

The student may work out the machine hour rate at the end instead of dividing each item by 2000. Hence the figures in bold font either in the second or the fourth are sufficient. However, for the last figure, the 338.5 is required, since machine hour rate is required.

(b)

(i) EOQ = $\dfrac{\sqrt{2 \times 2,500 \times 200}}{\sqrt{2\% \times 200}}$

$$= \frac{\sqrt{10,00,000}}{\sqrt{4}} = 500$$

(ii) Reorder level = Normal lead time x normal usage = $20 \times \frac{2,500}{250} = 200$

(iii) Evaluation of offer for quantity discount

Since EOQ is 500 units, the minimum quantity to get a discount is 1,250 is used for evaluation. Moreover, in this analysis, if the ordering cost is reduced to one order of 2,500 units, carrying cost will be much more and hence evaluation of this order size is not useful.

	Based on EOQ	**Discount offer**
Annual Demand = d	2,500	2,500
Order size (q units)	500	1,250
No. of orders	5	2
Ordering cost at 200 ₹/order	1,000	400
Purchase price ₹/unit = p	200	196
Purchase cost = d x p	5,00,000	4,90,000
Carrying Cost = $2\% \times \frac{q}{2} \times p$	1,000	2,450
Total cost = Purchase cost + ordering cost +carrying costs	5,02,000	4,92,850

The discount offer is more profitable.

4.

(a) The manufacture of each unit of Product X requires 2 kgs. each of raw materials A, B and C. There was no opening stock of any material. The following transactions took place in the production period relating to purchase of raw materials:

A's supplier charged ₹10,000 for 100 kgs. of A. Additionally, insurance was ₹600 and the freight to get A to the store was ₹ 800.

B's invoice price showed ₹12,000 charged by the supplier for 100 kgs. Freight was ₹800, which was included in the ₹12,000. There was no insurance. B had a normal evaporation loss of 10% in transit. A further abnormal loss of 20 kg of B was reported due to a small accident in transit. ? 200 was recovered from the transporter.

C's supplier charged ₹15,000 for 120 kgs of C. C absorbs moisture on exposure to the outside air and by the time it came to the store, it weighed 150 kgs. This is a normal feature of C.

Materials were issued to production as per requirement. Compute the material cost per unit of X corrected to two decimal places, using the Generally Accepted Cost Accounting Principles for material cost and giving the break- up of each raw material. **8**

(b) An engineering company produces a standard metallic product. There are three processes - Foundry, Machining and Assembly. 130 tonnes of raw material at ₹500 per tonne were issued to Foundry. The yield at the Foundry is 90% (both standard and actual). The normal and actual yield at the Machining Process is 95%. There is no loss in the Assembly Process. You may consider the losses as occurring at the end of the respective processes. The other details are as follows: **8**

Process	Direct Labour	Overheads
Foundry	200 hours at ₹100 per hour	₹150 per labour hour
Machining	100 hours at ₹50 per hour	₹ 200 per labour hour
Assembly	100 hours at ₹150 per hour	₹100 per labour hour

Prepare a Cost Sheet showing the element wise cost of output and cost per tonne of output.

Answer:

(a)

	Quantity	Value			
Material A:					
Invoice price	100	10,000			
Insurance		600			
Freight		800			
Total Cost	100	11,400	₹/kg of A =		114
Material B	100	12,000			
Normal loss 10 %	10				
	90	12,000	₹/ kg of B =		133.3333
Abnormal loss	20	2,666.667			
Material C	120	15,000			
Normal gain	30				
Total	150	15,000	₹/kg of C =		100
Material Cost of X					
A: 2 kgs	2	X	114	=	228
B: 2 kgs	2	X	133.3333	=	266.67
C: 2 kgs	2	X	100	=	200
Total material cost per unit of X					694.67

It can be writes that freight till the shop floor and insurance are part of material cost or shows the addition of these items in material A,

B: Normal loss is charged to material cost as per GACP. It should either write this or show the working for normal loss of B

B: Abnormal loss is not charged to production. It is written off to the Costing P & L A/c. Either this has to be written or the workings shown in B to state how much abnormal loss is excluded as above.

(b)

Raw material input	130	117	111.15
Loss	13	5.85	0
Output	117	111.15	**111.15**

Material Cost   500/tonne of input to foundry

Elements of Cost	Cost of total output	Cost/tone of output
Raw Material 130 x 500	65,000	**584.80**
Labour Foundry: 200 hrs x 100 ₹/hr	20,000	179.94
M/cng: 100 hrs @ 50/hr	5,000	44.98
Assembly: 100 hrs @ 150/hr	15,000	134.95
Subtotal - Labour	40,000	**359.87**
Overheads: Foundry 200 hrs @ 150/hr	30,000	269.91

M/ cng: 100 hrs @ 200/hr	20,000	179.94
Assembly : 100 hrs @100/hr	10,000	89.97
Subtotal – Overheads	60,000	**539.81**
Total Cost	1,65,000	**1,484.48**

Alternative answer:

	Foundry		Machining		Assembly	
	Cost/tone Of input	Cost/Tonne Of output	Cost/tonne Of input	Cost/Tonne Of output	Cost/tonne Of input	Cost/Tonne Of output
Material	500	555.56	555.56	584.80	584.80	584.80
Labour	153.85	170.94	170.94	179.94	179.94	179.94
Overhead	230.77	256.41	256.41	269.91	269.91	269.91
Labour			42.74	44.98	44.98	44.98
Overhead			170.94	179.94	179.94	179.94
Labour					134.95	134.95
Overhead					89.97	89.97
Total						**1,484.48**

Alternative answer:

Cost Element	Foundry		Machining		Assembly	
	Cost/tonne Of input	Cost/Tonne Of output	Cost/tonne Of input	Cost/Tonne Of output	Cost/tonne Of input	Cost/Tonne Of output
Material	500	555.56	555.56	584.80	584.80	584.80
Labour	153.85	170.94	213.68	224.92	359.87	359.87
Overheads			427.35	449.84	539.81	539.81
					1,484.48	**1,484.48**

5.
   (a) State the treatment of the following items in Cost Accounts:
   (i) Market Research
   (ii) Obsolete inventory
   (iii) Royalty on production of goods. **6**

   (b) In a manufacturing company, factory overhead was recovered at a pre-determined rate of ₹28 per labour hour. The total factory overhead incurred and the actual labour hours worked for October 2013 were ₹3,61,000 and 11,200 hours. Out of the ₹3,61,000, ₹22,400 became payable due to a one time award of a labour court. Out of the 75,000 units produced during the month, 60,000 were sold. 40% of the unrecovered overheads were due to defective planning and the rest was due to increase in overhead cost. Explain with figures how the under absorbed overhead would be treated in cost accounts. **6**

   (c) During a month, the following information is obtained from the Personnel Department of a manufacturing company:
   (i) Labour force at the beginning of the month was 1900 and at the end of the month was 2100.
   (ii) 25 people left while 40 were discharged. 280 workers were engaged out of which only 30 were appointed in the vacancy created by the number of workers separated and the rest on account of an expansion scheme.
   Calculate the labour turnover rate by the Replacement and Flux methods. **4**

Answer:
   (a)
   (i) Treatment of Market Research expenses in Cost Records:
   Many times organizations appoint professional bodies or conduct by themselves a study of potential market for their products. This study is aimed at finding the customer's needs, their habits, changing market for the products, technological

changes in the product, competition etc., Such expenses are <u>to be treated as a part of Sales and Distributive Costs</u>.

(ii) <u>Treatment of Obsolete Inventory in Cost Records:</u>

Obsolete Inventory may consist of raw materials or stores of finished goods. In either case, a write-off is made direct to Profit and Loss a/c and no charge is made to the cost of production.

(iii) <u>Treatment of Royalties in Cost Records:</u>

'Royalties are prices paid to acquire the right to manufacture and / or sell some goods generally belonging to the Government like Mines, Sand mining etc, When the Royalty is paid to acquire the right to manufacture or to produce the cost of the Royalty should be charged as a production cost and included in Production Overhead**.**

(b) Amount of under – absorbed factory overhead:

Total factory overheads incurred	₹3,61,000
Less: amount paid according to Labour Court award (Assumed to be non- recurring)	₹22,400
Net overhead incurred	₹3,38,600
Less: Overhead recovered for 11,200 hours @ ₹28 ph	₹3,13,600
Under absorbed factory overheads	₹25,000

Treatment

(i) Due to defective planning, 40% of 25,000 = ₹10,000 treated as abnormal and should be debited to P/L A/c

(ii) Remaining 60% of 25,000 = ₹ 15,000 should be distributed over finished goods stock and cost of sales by using supplementary rate - ₹ 15,000/75,000 = ₹ 0.20 per unit.
Charged to finished goods stock 75,000- 60,000 = 15,000 units @ ₹0.20 per unit = ₹ 3,000
Charged to cost of sales = 60,000 x 0.20 per unit   = ₹ 12,000

(c)

(i) Replacement method= No. of Replacement/No. of Avg. worker during the period
= 30 /2,000 X 100 = 1.5 %

(ii) Flux method = 1/2[No. of additions +No. of Separation]/No. of Avg. worker during the period

=1/2 (280 + 65) / 2,000 X 100 = 8.625 %

SECTION B - **Financial Management (40 marks)**

In Section B, Question No. 6 is compulsory. Answer any two out of the remaining three.

6.   Answer the following, showing the workings for each:

(i) ₹25,000 is being invested at the beginning of every year. We are now at the end of year II. Considering a 10% interest rate, what is today's value of the annual investments from year I till and including that of year V? (Take 10% discount factors as: 1,0.909,0.826,0.751,0.683,0.621,0.564 for year-end 0,1,2,3,4,5,6)   **2**

(ii) Perpetual 15% debentures of ₹1,000 are sold at a premium of 10% with no floatation costs. Taking corporate tax rate at 35%, the after-tax cost of capital will be

(A)   6.88%

(B)   7.88%

(C)   8.86%

(D)   10.73%   **2**

(iii) In 2011-12, XYZ Pharma Ltd. had a profit margin of 20% and asset turnover of 3 times. At the end of year 2012-13, the profit margin decreases by 5% and asset turnover increased to 4

times. The return on investment for 2012-13 will be

(A) 80%

(B) 60%

(C) 50%

(D) 70% **2**

(iv) Given that Sales = ₹50,000, Variable Cost = 60%, Fixed Cost = ₹12,000, the operating leverage will be

(A) 2.2

(B) 2.0

(C) 5.2

(D) 2.5 **2**

Answer:

(i)

End of year	0	1	2	3	4	5
	25,000	25,000	25,000	25,000	25,000	-
Now at end of Year 2	$(1.1)^2$	$(1.1)^1$	1	$\dfrac{1}{(1.1)}$	$\dfrac{1}{(1.1)^2}$	-
	1.21	1.1	1	0.909	0.826	-
	= 25,000 x 5 = 1,25,000					

Alternative answer:

For equal past and future cash flow Pv do not matter.

Hence, Pv of Investment = 25,000 x 5 = 1,25,000

(ii) (C) = 8.86%

After – tax cost of capital (K_d) = [Interest payment / Sale price of Debenture] x [1 -t];

[150 x (1 - 0.35)/(1,000 + 100)] x 100 = 8.86%.

(iii) (B) = 60%

Revised Net Profit Ratio = 20 -5 =15%.; and Revised asset turnover Ratio = 4 times.

Hence, ROI = 15% x 4 =60%.

(iv) (D) = 2.50

Contribution = Sales - Variable cost = 50,000 - 30,000 =20,000; So, Operating profit = ₹ 8,000.

Hence, Operating leverage = Contribution / operating profit = 20,000 / 8,000 = 2.50.

7.

(a) The Balance – Sheet of XYZ Ltd. for the year ended 31.03.2013 is given below: **8**

Balance Sheet as at 31.03.2013

Liabilities	₹	Assets	₹
Equity Share Capital	5,00,000	Land & Building	1,00,000
Preference Share Capital	2,00,000	Machinery	4,00,000
General Reserve	1,00,000	Furniture	50,000
Secured Loans	3,00,000	Inventory	3,00,000
Sundry Creditors	1,00,000	Sundry Debtors	3,00,000
		Cash/Bank Balances	50,000
Total	12,00,000		12,00,000

Calculate the following ratios from the given Balance Sheet

(i) Current Ratio

(ii) Proprietory Ratio

(iii) Debt-Equity Ratio

(iv) Capital Gearing Ratio

(b) The capital structure of J Ltd. is as under: **8**

	₹
Equity shares @ ₹ 10 each	100,00,000
9% Preference Shares @ ₹100 each	30,00,000
14% Debentures @ ₹100 each	70,00,000
The market price of these securities are:	
Equity Shares	35 per share
Preference Share	120 per share
Debentures	110 per debenture

Other information are:

(i) Equity shares have a floatation cost of ₹ 5 per share. The next year's expected dividend is ₹3 with annual growth of 5%. The company pays all earnings in the form of dividends.

(ii) Preference Shares are redeemable at a premium of 10%, have 2% floatation cost and 10 year maturity.

(iii) Debentures are redeemable at par, have 4% floatation and 10 per year maturity.

(iv) Corporate tax rate is 30%.

You are required to calculate the weighted average cost of capital using (i) book value weights and (ii) market value weights.

Answer:

(a) $\text{Current Ratio} = \dfrac{\text{Current Assets}}{\text{Current Liabilities}} = \dfrac{6,50,000}{1,00,000}$

$= 6.5 : 1$ or simply 6.5

$\text{Propriety ratio} = \dfrac{\text{Shareholders' funds}}{\text{Total Tangible Assets}} = \dfrac{8,00,000}{12,00,000}$

$= 2 : 3$

$\text{Debt Equity ratio} = \dfrac{\text{Total Long Term Debt}}{\text{Shareholders' funds}} = \dfrac{3,00,000}{8,00,000}$

$= 3 : 8$

Or,

$\text{Debt Equity ratio} = \dfrac{\text{Total Long Term Debt}}{\text{Debt + Equity}} = \dfrac{3,00,000}{11,00,000}$

$= 3 : 11$

$\text{Capital gearing ratio} = \dfrac{\text{Long term Debt(incl.Pref.capital)}}{\text{Equity Shareholders' funds}} = \dfrac{5,00,000}{6,00,000}$

$= 5 : 6$

(For Capital gearing, it may consider an alternative solution also)

(b) Cost of capital (K_e) = D/P + G
$= 3/(35 - 5) + 0.05$
$= 3/30 + 0.05$
$= 0.10 + 0.05$
$= 0.15$ or 15%

Cost of preference capital (kp) = $\dfrac{9+(110-98)/10}{(110+98)/2}$

$\qquad\qquad$ = (9+1.2)/104

$\qquad\qquad$ = 10.2/104

$\qquad\qquad$ = 0.098

$\qquad\qquad\qquad$ Or 9.8%

Cost of Debt (kd) $\qquad = \dfrac{14(1-0.3)+\dfrac{(100-96)}{10}}{(100+96)/2}$

$\qquad\qquad = \dfrac{14\times0.7+0.4}{98}$

$\qquad\qquad = \dfrac{9.8+0.4}{98}$

$\qquad\qquad = \dfrac{10.2}{98}$

$\qquad$ = 0.1041 or 10.41%

Calculation of WACC using book value weights:

Source of Capital	Book Value (₹)	Weight (w)	Specification (k)	WACC
Equity Shares	100,00,000	0.5	0.15	0.075
9% Preference Shares	30,00,000	0.15	0.098	0.0147
14% Debentures	70,00,000	0.35	0.1041	0.0364
	200,00,000	1.00		0.1261

WACC = 0.1261 or 12.61%

Calculation of WACC using market value weights:

Source of Capital	Book Value (₹)	Weight (w)	Specification (k)	WACC
Equity Shares	350,00,000	0.756	0.15	0.1134
9% Preference Shares	36,00,000	0.078	0.098	0.0076
14% Debentures	77,00,000	0.166	0.1041	0.0173
	463,00,000	1.00		0.1383

WACC = 0.1383 or 13.83%

8.

(a) A company has received an offer to purchase a new machinery in replacement of the existing one. The cost of the new machine will be ₹ 30 lacs. The supplier has offered to take the existing machine at ₹4 lacs.

The new machine will have an expected life of 5 years after which it will fetch a salvage value of ₹ 3 lacs. Currently, the company generates sales revenue of ₹ 40 lacs per annum and earns a contribution of 40% of sales. The new machine will reduce the unit variable cost by 20% and increase the output by 20%. The extra output can be sold. The revenue cash flows may be considered at the end of each year. The company's after tax cost of capital is 14% per annum. The present value factors at 14% at each year end are as follows:

Year	1	2	3	4	5
P. V. factor	0.877	0.769	0.675	0.592	0.519

Based on the Net Present Value criterion, advise whether the proposal is acceptable. Ignore taxation.

8

(b) Write a short note on Commercial Paper in India   **4**

(c) What a factoring? Explain the concept of full service factoring.   **4**

Answer:

(a)

		Current	New				
	Sales Revenue	40,00,000	48,00,000				
	Cost 60 % existing	24,00,000	23,04,000				
	Contribution 40 % of sales (existing)	16,00,000	24,96,000				
	Increase in contribution	8,96,000					
Alternative 1							
	Existing situation (Cash Flows)						
	End of year	0	1	2	3	4	5
	Investment	0					
	Contribution	0	**16,00,000**	**16,00,000**	**16,00,000**	**16,00,000**	**16,00,000**
	P.V. factor	1	0.877	0.769	0.675	0.592	0.519
	P.V. of cash inflows		**14,03,200**	**12,30,400**	**10,80,000**	**9,47,200**	**8,30,400**
	Total P.V. of net inflows	**54,91,200**					
	(It is assumed that there is no salvage value for the existing machine after 5 years and that its useful life in 5 more years)						
	Proposed machine						
	End of year	0	1	2	3	4	5
	Cost of new machine	-30,00,000					
	Salvage Value of Old Machine	4,00,000					
	Contribution	0	**24,96,000**	**24,96,000**	**24,96,000**	**24,96,000**	**24,96,000**
	Net Inflow/ (Outflow)	-26,00,000	24,96,000	24,96,000	24,96,000	24,96,000	24,96,000
	P. V. factors	1	0.877	0.769	0.675	0.592	0.519
	P.V. of cash flows	-26,00,000	21,88,992	19,19,424	16,84,800	14,77,632	12,95,424
	Net Present Value	59,66,272					
	Increase in NPV with new machine	4,75,072					
	Decision: Based on NPV criterion, purchase the new machine.						
Alternative II							

		0	1	2	3	4	5
	Incremental Approach						
	End of year	0	1	2	3	4	5
	Cost of new machine	-30,00,000					
	Salvage Value of Old Machine	4,00,000					
	Incremental Contribution	0	8,96,000	8,96,000	8,96,000	8,96,000	8,96,000
	Net Inflow/ (Outflow)	-26,00,000	8,96,000	8,96,000	8,96,000	8,96,000	8,96,000
	P.V. factors	1	0.877	0.769	0.675	0.592	0.519
	P.V. of cash flows	-26,00,000	7,85,792	6,89,024	6,04,800	5,30,432	4,65,024
	Net Present Value	4,75,072					
	Increase in NPV with new machine	4,75,072					
	Conclusion: Incremental NPV is positive when the new machine is purchased. Hence, purchase the new machine						
Alternative III							
	Alternatively, students may take the annuity factor (year 1 to 5) =		3.432	and multiply it by the contribution per year			
	Then, PV of outflows =	-26,00,000					
	P.V. of inflows = **8,96,000** x 3.432 =	30,75,072					
	Net Present Value = +	4,75,072					
	Based on the positive NPV, the machine may be replaced with a new one						

(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 beyond the maturity period.

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

(c) Factoring

Factoring may be defined as the relationship between the seller of goods and a financial firm, called the factor, whereby the latter purchases the receivables of the former and also administer the receivable of the former. Factoring involves sale of receivable of a firm to another firm under an already existing agreement between the firm and the factor.

OR
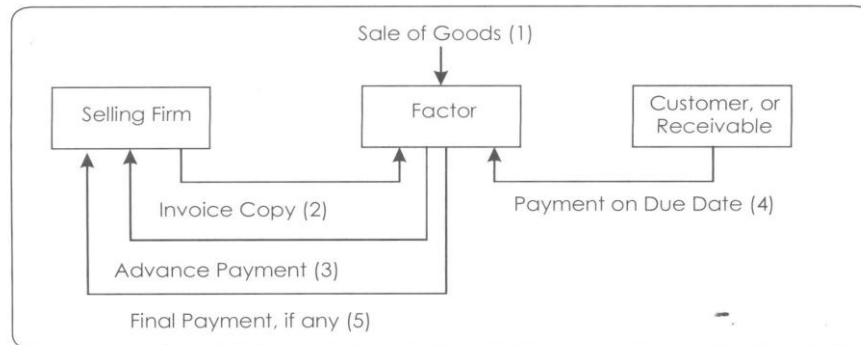
Graphical representation of factoring

Modus Operandi

A factor provides finance to his client up to a certain percentage of the unpaid invoices which represent the sale of goods or services to approved customers. The modus operandi of the factor as follows.

(a) There should be a factoring arrangement (invoice purchasing arrangement) between the client (which sells goods and services to trade customers on credit) and the factor, which is the financing organization.

(b) Whenever the client sells goods to trade customers on credit, he prepares invoices in the usual way

(c) The goods are sent to the buyers without raising a bill of exchange but accompanied by an invoice.

(d) The debt due by the purchaser to the client is assigned to the factor by advising the trade customers, to pay the amount due to the client, to the factor.

(e) The client hands over the invoices to the factor under cover of a schedule of offer along with the copies of invoices and receipted delivery challans or copies of R/R or L/R.

(f) The factor makes an immediate payment up to 80% of the assigned invoices and the balance 20% will be paid on realization of the debt.

Full Service Factoring

Under this type, a factor provides all kinds of services discussed above. Thus, a factor provides finance, administers the sales ledger, collects the debts at his risk and renders consultancy service. This type of factoring is a standard one. If the debtors fail to repay the debts, the entire responsibility falls on the shoulders of the factors since he assumes the credit risk also. He cannot pass on this responsibility to his client and, hence, this type of Factoring is also called 'Without recourse' factoring.

9.

(a) **From the following information, work out the average amount of working capital requirement:**

	Average period of credit (in weeks)	Estimate for the year (52 weeks) (in ₹)
Purchase of material	6	26,00,000
Wages	$1\frac{1}{2}$	20,80,000
Rent	26	1,00,000
Other overheads	8	10,40,000
Salaries	4	13,00,000

Credit sales	8	52,00,000

Average amount of holding of stocks and WIP is ₹4,00,000 and there should be cash balance of ₹50,000. Assume that all expenses and income are made evenly throughout the year. **8**

(b) Answer any two of the following:

(i) Classify the following independent items of cash flows under AS-3 **4**
1. Cash receipts from future contracts held for trading purpose.
2. Cash receipts from repayment of advances to third parties other than a financial enterprise.
3. Cash interest received from by a financial enterprise.
4. Cash received from disposal of fixed assets.
5. Cash receipts from interests in joint venture.
6. Dividends paid by a non-financial enterprise.
7. Cash payments on account of acquisition of a subsidiary.
8. Cash flows arising from taxes on income, not specifically identifiable.

(ii) Write a short note on Foreign Currency Convertible Bonds (FCCBs) **4**

(iii) Explain the procedure involved in the 'Forfeiting' Financial Service. **4**

Answer:

(a)

		Estimate p. a	Estimate p. week	Avg. Credit period	Working capital requirement
				weeks	₹
	Purchase of material	26,00,000	50,000	6	30,00,00
	Wages	20,80,000	40,000	1.5	60,000
	Rent	1,00,000	1,923.08	26	50,000
	Other overheads	10,40,000	20,000	8	1,60,000
	Salaries	13,00,000	25,000	4	1,00,000
	Total Current Liabilities				6,70,000
	Current Assets				
	Credit Sales (Debtors)	52,00,000	1,00,000	8	8,00,000
	Inventory including WIP				4,00,000
	Cash balance				50,000
	Total Current Assets				12,50,000
	Net Working Capital Requirement (Average) = Current Assets - Current Liabilities =				5,80,000

(b)

(i) Classification of the following independent items of cash flows under AS – 3:
1. Cash receipts from future contracts held for trading purpose – **Operating Activities**
2. Cash receipts from repayment of advances to third parties other than a financial enterprise – **Investing Activities**
3. Cash interest received from by a financial enterprise - **Operating Activities**
4. Cash received from disposal of fixed assets - **Investing Activities**
5. Cash receipts from interests in joint venture - **Investing Activities**
6. Dividends paid by a non-financial enterprise – **Financing Activities**
7. Cash payments on account of acquisition of a subsidiary - **Investing Activities**
8. Cash flows arising from taxes on income, not specifically identifiable - **Operating Activities**

(ii) Foreign Currency Convertible Bonds (FCCBs)

The FCCB means bonds issued in accordance with the relevant scheme and subscribed by a non-resident in foreign currency and convertible into ordinary shares of the issuing company in any manner, either in whole or in part, on the basis of any equity related warrants attached to debt instruments. The FCCBs are unsecured; carry a fixed rate of interest and an option for conversion into a fixed number of equity, shares of the issuer company. Interest and redemption price (if conversion option is not exercised) is payable in dollars. Interest rates are very low by Indian domestic standards. FCCBs are denominated in any freely convertible foreign currency.

FCCBs have been popular with issuers. Local debt markets can be restrictive in nature with comparatively I short maturities and high interest rates. On the other hand, straight equity-issue may cause a dilution in earnings, and certainly a dilution in control, which many shareholders, especially major family shareholders, would find unacceptable. Thus, the low coupon security which defers shareholders dilution for several years can be alternative to an issuer. Foreign investors also prefer FCCBs because of the Dollar denominated servicing, the conversion option and the arbitrage opportunities presented by conversion of the FCCBs into equity at a discount on prevailing India market price.

(iii) Forfeiting Financial Service

The term "a forfait" in French means, "relinquish a right". It refers to the exporter relinquishing his right to a receivable due at a future date in exchange for immediate cash payment, at an agreed discount, passing all risks and responsibilities for collecting the debt to the forfeiter.

It is the discounting of international trade receivable on a 100% "Without recourse" basis. "Without recourse" means the client gets full credit protection and all the components of service, i.e., short-term finance, administration of sales ledger are available to the client.

Forfeiting transforms the supplier's credit granted to the importer into cash transaction for the exporter protecting him completely from all the risks associated with selling overseas on credit. It effectively transforms a credit sale into a cash sale.

Procedure

(a) The exporter sells the goods to the importer on a deferred payment basis spread over 3-5 years.

(b) The importer draws a series of promissory notes in favour of the exporter for the payments to be made inclusive of interest charges.

(c) Such promissory notes are availed or guaranteed by a reputed international bank which can also be the importer's banker, (it is endorsed on the promissory note by the guaranteeing bank that it covers any default of payment of the buyer).

(d) The exporter now sells the availed notes to a forfeiter (which may be the exporter's banker) at a discount without recourse.

(e) The forfeiter may hold these notes till maturity or sell them to group of investors interested in taking up such high-yielding unsecured paper.

Graphical representation of

Forfeiting

1 = Promissory notes sent for availing to the importer's banker
2 = Availed notes returned to the importer
3 = Availed notes sent to exporter
4 = Availed notes sold at a discount to a forfeiter on a non - recourse basis
5 = Exporter obtains finance
6 = Forfeiter holds the notes till maturity or sells the short-term paper either to a group of investors or to investors in the secondary market.