

MOCK TEST PAPER – 2
IPCC/PCC: GROUP – I/GROUP – II
PAPER – 3/4 : COST ACCOUNTING AND FINANCIAL MANAGEMENT
PART – I : COST ACCOUNTING
SUGGESTED ANSWERS/HINTS

1. (i) (a) B.E.P. = Fixed Cost / Contribution per unit
= 1,50,000 / 15 = 10,000 Units
- (b) Sales to earn a Profit of ₹ 20,000 = $\frac{(\text{Fixed cost} + \text{Desired Profit}) \times \text{Selling Price}}{\text{Contribution per unit}}$
Sales = (1,50,000 + 20,000)/15 x 30
= (1,70,000/15) x 30
= ₹ 3,40,000
- (ii) Calculation of average no. of workers during the period:-
Average no. of workers = (No. of workers in the beginning of the period + No. of workers at the end of the period)/2
= (400 + 500)/2
= 450
Labour Turnover Rate = (No. of workers left during the period + No. of workers replaced during the period) / (Average no. of workers during the period) x 100
= (45 + 40)/450 x 100 = 18.8%
- (iii) EOQ = $\sqrt{2 \times A \times O / C}$
= $\sqrt{[2(50 \times 365)] \times 50 / (0.02 \times 365)}$
= $\sqrt{250000}$
= 500 units
Re-order level = Maximum Consumption x Maximum Delivery Period
= 50 x 32 = 1600 units
- (iv) Cost of R & D project undertaken on behalf of a specific customer should not be treated as manufacturing overhead. It should be regarded as a separate profit centre. All expenses to meet such costs should be debited to "Outside R & D Project Account". Receipts against such requests are to be credited against this account.

- (v) **Spoilage:** It refers to materials which are badly damaged in manufacturing operations and they cannot be rectified economically and hence taken out of the process to be disposed off in some manner without further processing. Spoilage may be normal or abnormal.
- (a) **Normal spoilage:** It arises under efficient operating conditions. It is an inherent result of the particular process and thus uncontrollable in the short run. The normal spoilage costs are included in costs either by charging the loss due to spoilage to the production order or by charging it to production overhead so that it is spread over all the products. Any value realised from spoilage is credited to production order or production overhead account as the case may be.
 - (b) **Abnormal spoilage:** Abnormal spoilage is that which arises due to causes not inherent in the manufacturing process. The cost of abnormal spoilage is charged to costing profit and loss account.
- (vi) **Differential cost:** It may be defined as “the increase or decrease in total cost or the change in specific elements of cost that result from any variation in operations”. It represents an increase or decrease in total cost resulting out of:
- (a) Producing or distributing a few more or few less of the products;
 - (b) A change in the method of production or of distribution;
 - (c) An addition or deletion of a product or a territory; and
 - (d) Selection of an additional sales channel.

Differential cost, thus includes fixed and semi-variable expenses. It is the difference between the total costs of two alternatives. It is an *ad hoc* cost determined for the purpose of choosing between competing alternatives, each with its own combination of income and costs.

Incremental cost: It is defined as, “the additional costs of a change in the level or nature of activity”. As such for all practical purposes there is no difference between incremental cost and differential cost. However, from a conceptual point of view, differential cost refers to both incremental as well as decremental cost. Incremental cost and differential cost calculated from the same data will be the same. In practice, therefore, generally no distinction is made between differential cost and incremental cost. One aspect which is worthy to note is that incremental cost is not the same at all levels. Incremental cost between 50% and 60% level of output may be different from that which is arrived at between 80% and 90% level of output. Differential cost or incremental cost analysis deals with both short-term and long-term problems. This analysis is more useful when various alternatives or various capacity levels are being considered.

2. (a)

Process Account

Particulars	Units	Amount	Particulars	Units	Amount
		₹			₹
To Units introduced	50,000	1,47,000	By Normal loss @ ₹ 1	1,500	1,500
To Direct material		1,38,300	By Abnormal loss*	1,200	6,960
To Direct wages		65,550	By Finished production*	39,300	3,65,490
To Production overhead		74,700	By Closing WIP*	8,000	51,600
	<u>50,000</u>	<u>4,25,550</u>		<u>50,000</u>	<u>4,25,550</u>

Abnormal Loss Account

Particulars	Amount	Particulars	Amount
	₹		₹
To Process A/c	6,960	By Scrap (120 × ₹ 1)	1,200
	<u>6,960</u>	By Profit and Loss A/c	<u>5,760</u>
			<u>6,960</u>

*See working notes.

Working Notes:

This is a peculiar question of normal / abnormal loss involving use of equivalent concept. For valuation of abnormal loss, finished production and WIP, first of all equivalent units for them will have to be found out as under:

Statement showing equivalent units

Particulars	Input Materials			Direct wages		P. overheads	
		%	Units	%	Units	%	Units
Abnormal loss	1,200	66.67	800	33.33	400	16.67	200
Finished units	39,300	100.00	39,300	100.00	39,300	100.00	39,300
Clg. WIP	<u>8,000</u>	75.00	<u>6,000</u>	50.00	<u>4,000</u>	25.00	<u>2,000</u>
Total	<u>48,500</u>		<u>46,100</u>		<u>43,700</u>		<u>41,500</u>

Statement of Cost per Equivalent unit for each element

<i>Particulars</i>		<i>Cost</i>	<i>Equivalent Unit</i>	<i>Cost per unit</i>
		₹	₹	₹
Input material	1,47,000			
Less: Scrap realization	<u>1,500</u>	1,45,500	48,500	3.00
Materials added		1,38,300	46,100	3.00
Direct wages		65,550	43,700	1.50
Production overhead		74,700	41,500	1.80

Statement showing cost of Abnormal Loss, finished production and WIP

<i>Particulars</i>	<i>Equivalent units</i>	<i>Cost per units (₹)</i>	<i>Total cost (₹)</i>
Abnormal Loss			
Input	1,200	3.00	3,600
Material added	800	3.00	2,400
Direct wages	400	1.50	600
Production overheads	<u>200</u>	1.80	<u>360</u>
			<u>6,960</u>
Finished Production			
Input	39,300	3.00	1,17,900
Material added	39,300	3.00	1,17,900
Direct wages	39,300	1.50	58,950
Production overheads	<u>39,300</u>	1.80	<u>70,740</u>
			<u>3,65,490</u>
Closing WIP			
Input	8,000	3.00	24,000
Material added	6,000	3.00	18,000
Direct wages	4,000	1.50	6,000
Production overheads	<u>2,000</u>	1.80	<u>3,600</u>
			<u>51,600</u>

(b) (i)

Production budget
(For the year 2011 by quarters)

(a) Units to be produced in each quarters

Quarters

	I	II	III	IV	Total
2/3 of current quarter's sales demand	8,000	10,000	11,000	12,000	41,000
1/3 of the following quarter demand*	<u>5,000</u>	<u>5,500</u>	<u>6,000</u>	<u>6,500</u>	<u>23,000</u>
	<u>13,000</u>	<u>15,500</u>	<u>17,000</u>	<u>18,500</u>	<u>64,000</u>

(b) Statement showing direct material, variable overhead and fixed overhead

Quarters

	I	II	III	IV	Total
Units to be produced	13,000	15,500	17,000	18,500	64,000
Direct Material @ ₹ 5 Per unit (Refer to Note 1)	₹ 65,000	₹ 77,500	₹ 85,000	₹ 92,500	₹ 3,20,000
Direct Labour @ ₹ 6 per Unit (Refer to Note 2)	78,000	93,000	1,02,000	1,11,000	3,84,000
Variable overhead ₹ 1.5 per unit (Refer to Note 3)	19,500	23,250	25,500	27,750	96,000
Fixed Overhead (Refer to Note 4)	<u>45,000</u>	<u>45,000</u>	<u>45,000</u>	<u>45,000</u>	<u>1,80,000</u>
	<u>2,07,500</u>	<u>2,38,750</u>	<u>2,57,500</u>	<u>2,76,250</u>	<u>9,80,000</u>

(ii) Budgeted profit for the whole year

	₹
Sales (61,500** units @ ₹ 17 per unit)	10,45,500
Less: Total variable cost per unit (61,500** unit @ ₹ 12.50 per unit)	<u>7,68,750</u>
Contribution	2,76,750
Less: Fixed cost	<u>1,80,000</u>
Profit for the whole year	<u>96,750</u>

Variable cost per unit:	₹
Direct material cost (Refer to Note 1)	5.00
Direct labour cost (Refer to Note 2)	6.00
Variable cost (Refer to Note 3)	<u>1.50</u>
	<u>12.50</u>

(iii) BES x P/V ratio = Fixed cost

Or BES x (₹ 17-12.50)/17 = ₹ 1,80,000

or Break-even sales (volume) = 6,80,000.

BE Sales in units = ₹ 6,80,000 / 17 or 40,000 units.

The total sales by the end of third quarter will be 43,500 units, i.e., 12,000 + 15,000 + 16,500, therefore, the company will break-even in the later part of the third quarter.

Working Notes:

1. Direct material cost = 10 lbs @ ₹ 0.50 per lb = ₹ 5.00 per unit.
2. Direct labour per unit = 1 hr. 30 minutes @ ₹ 4 per hour = ₹ 6 per unit.
3. Variable overhead per unit = 1 hr. 30 minutes @ ₹ 1 per hour = ₹ 1.50 unit
4. Fixed Overhead

Budgeted production volume is 90,000 direct labour hours for the year @ ₹ 2 per hour i.e. ₹ 1,80,000 for the year. This fixed overhead is spread over the four quarters equally.

* In first three quarters; inventory given for the fourth.

** Sales for the year is given i.e. 12,000+ 15,000+16,500+18,000=61,500 unit.

3. (a) Standard Quantity of Materials for Actual Output:

P	6,000 ´ 2	12,000 units
Q	6,000 ´ 3	18,000 units
R	6,000 ´ 15	90,000 units

Standard hours for Actual Output:

6,000 ´ 3	18,000 units
-----------	--------------

Material price Variance:

(Standard Price - Actual Price) ´ Actual Quantity	₹
P (₹ 4.00 - ₹ 4.40) ´ 12,500	5,000 A
Q (₹ 3.00 - ₹ 2.80) ´ 18,000	3,600 F

R	(₹ 1.00 - ₹ 1.20) ´ 88,500	<u>17,700 A</u>
		<u>19,100 A</u>

Material Usage Variance:

(Standard Usage - Actual Usage) ´ Standard Price

P	(12,000 - 12,500) ´ ₹ 4.00	2,000 A
Q	(18,000 - 18,000) ´ ₹ 3.00	Nil
R	(90,000 - 88,500) ´ ₹ 1.00	<u>1,500 F</u>
		<u>500 A</u>

Labour Rate Variance:

(Standard Rate - Actual Rate) ´ Actual hours

(₹ 8.00 - ₹ 12.00) ´ 2,500	10,000 A
(₹ 8.00 - ₹ 8.00) ´ 15,000	<u>Nil</u>
	<u>10,000 A</u>

Labour Efficiency Variance:

(Standard hours - Actual hours) ´ Standard Rate

(18,000 - 17,500) ´ ₹ 8.00	<u>4,000 F</u>
----------------------------	----------------

(b) Working Notes:

1. Statement of selling price per unit of the product

Material cost	₹
P: 3 lbs x ₹6 =	₹ 18
Q: 1.5 lbs x ₹4 =	<u>₹ 6</u> 24
Labour cost	
Machine shop 7 hrs x ₹ 4 =	₹ 28
Assembly shop 2.5 hrs x ₹3.20 =	<u>₹ 8</u> 36
Overheads	
33-1/3% of Direct Labour Cost	<u>12</u>
Cost (per unit)	72
Add: Profit 20% of selling price or 25% on cost	<u>18</u>
Selling price (per unit)	<u>90</u>

2. The comprehensive labour rate has been assumed as direct labour.

(a) The number of units of the product proposed to be sold

Selling price (per unit) ₹ 90

Total sales revenue ₹ 1,26,00,000

Number of units of the product proposed to be sold 1,40,000 Units

₹ 1,26,00,000

₹ 90

(b) Statement of material P and Q to be purchased during the year in Rupees

Materials	Material Consumption (lbs)	Closing balance of material (lbs)	Opening balance of material (lbs)	Material to be purchased (lbs)	Purchase price ₹	Amount ₹
(1)	(2)	(3)	(4)	(2)+(3)- (4)=(5)	(6)	(5)x(6)=(7)
P	*1,45,0000 x 3 = 4,35,000	30,000	54,000	4,11,000	6	24,66,000
Q	1,45,000x1.5 = 2,17,500	66,000	33,000	2,50,500	4	10,02,000
Total						<u>34,68,000</u>

Working Note:

Number of units of finished goods to be manufactured during the year

= Sales (units) during the year + Closing balance – Opening stock

= 1,40,000 units +25,000 units – 20,000 units

= 1,45,000 units

(c) Capacity Utilisation Statement of Machine shop and Assembly Section

	Machine shop	Assembly Section
Hours available during the year (See working note)	600 persons x 1,840 hrs. =11,04,000	180 Persons x 1,840 hrs. = 3,31,200
Hours required to manufacture 1,45,000 units	1,45,000 x 7 hrs. =10,15,000	1,45,000 x 2.5 hrs. =3,62,500
Surplus/(Deficit) hours	89,000	(31,300)
Capacity utilisation	91.94%	109.45%

Working note:

Hours available during the year: 2080 hrs.

5 days x 8 hrs x 52 weeks

Less: Statutory holidays, leave and 240 hrs.

absenteeism & idle time

(96 hrs. + 80 hrs. + 64 hrs.) 1,840 hrs.

Comments: From the statement of hours required to manufacture 1,45,000 units of the product, it is apparent that the total hours required in machine shop and assembly section would be 10,15,000 and 3,62,500 respectively. Whereas the available hours in machine shop and assembly section are 11,04,000 and 3,31,200 respectively. In this way there are 89,000 surplus hours in the machine shop and also a deficit of 31,300 hours in the assembly section. To resolve the problem of deficit in assembly section, following suggestions are made:

1. If the workers can be interchangeable then the assembly section utilize the services of workers which may be transferred from the machine shop to meet the production target of 1,45,000 units.
2. If the workers are not interchangeable then the assembly section may either resort to overtime or increase the strength of workers to catch up the budgeted production. Under both the ways i.e resorting to overtime or increasing the strength in assembly section, the profit of the concern will be reduced.

4 (i) Methods of calculating labour turnover

$$(1) \text{ Replacement method} = \frac{\text{Number of employees replaced}}{\text{Average number of employees on roll}} \times 100$$

$$(2) \text{ Separation method} = \frac{\text{Number of employees separated during the year}}{\text{Average number of employees on roll during the year}} \times 100$$

$$(3) \text{ Flux method} = \frac{\text{Number of employees separated} + \text{Number of employees replaced}}{\text{Average number of employees on roll during the year}} \times 100$$

Workers joining a business concern on account of its expansion do not account for labour turnover.

(ii) Output in a process is input minus loss in process. Suppose input in process A = 100 Kg.

$$\text{Output in Process A} = 100 - 25\% = 75 \text{ Kg}$$

$$\text{Output in Process B} = 75 \text{ kg} - 20\% = 60 \text{ Kg}$$

$$\text{Output in Process C} = 60 \text{ kg} - 20\% = 48 \text{ Kg}$$

Output in Process D = $48 \text{ kg} - 16\frac{2}{3} \% = 40 \text{ Kg}$

When Output in Process D is 40,000 kg, then input in Process A will be

$$= 40,000 \text{ kg.} \times \frac{100}{40} = 1,00,000 \text{ kg.}$$

Thus cost of materials introduced in Process I = 1,00,000 kg. @ ₹ 5 = ₹ 5,00,000.

(iii) Essentials of a good Cost Accounting System: The essential features, which a good Cost Accounting System should possess, are as follows:

- (i) Cost Accounting System should be tailor-made, practical, simple and capable of meeting the requirements of a business concern.
- (ii) The data to be used by the Cost Accounting System should be accurate; otherwise it may distort the output of the system.
- (iii) Necessary cooperation and participation of executives from various departments of the concern is essential for developing a good system of Cost Accounting.
- (iv) The Cost of installing and operating the system should justify the results.
- (v) The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.
- (vi) A carefully phased programme should be prepared by using network analysis for the introduction of the system.
- (vii) Management should have a faith in the Costing System and should also provide a helping hand for its development and success.

(iv) Job Costing and batch costing

According to job costing, costs are collected and accumulated according to jobs. Each job or unit of production is treated as a separate entity for the purpose of costing. Job costing may be employed when jobs are executed for different customers according to their specifications. Job costing is suited to industries engaged in printing, laundry, repair shops, locomotives etc.

Batch costing is a form of job costing, a lot of similar units which comprises the batch may be used as a cost unit for ascertaining job. Such a method of costing is used in case of pharmaceutical industry readymade garments, industries manufacturing parts of TV, radio sets etc.

MOCK TEST PAPER – 2
IPCC/PCC: GROUP – I/GROUP-II
PAPER – 3/4 : COST ACCOUNTING AND FINANCIAL MANAGEMENT
PART – II : FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/HINTS

1. (i) Responsibilities of Chief Financial Officer (CFO)

The chief financial officer of an organisation plays an important role in the company's goals, policies, and financial success. His main responsibilities include:

- (a) Financial analysis and planning: Determining the proper amount of funds to be employed in the firm.
- (b) Investment decisions: Efficient allocation of funds to specific assets.
- (c) Financial and capital structure decisions: Raising of funds on favourable terms as possible, i.e., determining the composition of liabilities.
- (d) Management of financial resources (such as working capital).
- (e) Risk Management: Protecting assets.

(ii) Return on Capital Employed (ROCE)

It is the most important ratio of all. It is the percentage of return on funds invested in the business by its owners. In short, it indicates what returns management has made on the resources made available to them before making any distribution of those returns.

$$\text{Return on Capital Employed} = \frac{\text{Return}}{\text{Capital Employed}} \times 100$$

(iii) Concept of Indian Depository Receipts

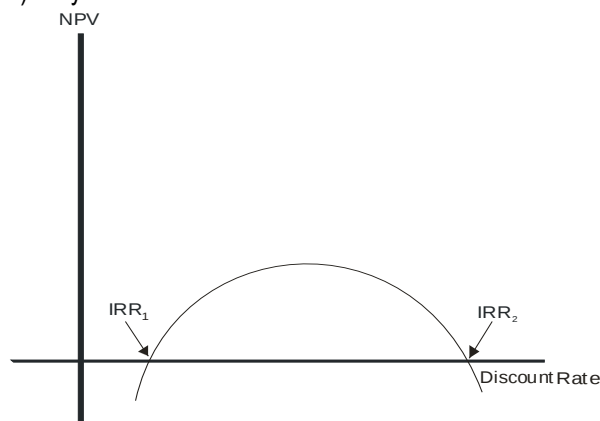
The concept of the depository receipt mechanism which is used to raise funds in foreign currency has been applied in the Indian capital market through the issue of Indian Depository Receipts (IDRs). Foreign companies can issue IDRs to raise funds from Indian market on the same lines as an Indian company uses ADRs/GDRs to raise foreign capital. The IDRs are listed and traded in India in the same way as other Indian securities are traded.

(iv) Secured Premium Notes (SPNs)

They are issued along with detachable warrants and are redeemable after a notified period of say 4 to 7 years. This is a kind of NCD attached with warrant. It was first introduced by TISCO, which issued the SPNs to existing shareholders on right basis. Subsequently the SPNs will be repaid in some number of equal instalments. The warrant attached to SPNs gives the holder the right to apply for and get allotment of equity shares as per the conditions within the time period notified by the company.

(v) Multiple Internal Rate of Return (MIRR)

In cases where project cash flows change signs or reverse during the life of a project for example, an initial cash outflow is followed by cash inflows and subsequently followed by a major cash outflow, there may be more than one internal rate of return (IRR). The following graph of discount rate versus net present value (NPV) may be used as an illustration:



In such situations if the cost of capital is less than the two IRRs, a decision can be made easily, however, otherwise the IRR decision rule may turn out to be misleading as the project should only be invested if the cost of capital is between IRR_1 and IRR_2 . To understand the concept of multiple IRRs it is necessary to understand the implicit re-investment assumption in both NPV and IRR techniques.

2. Cash Flow Statement for the year ending 31st March, 2011

		₹	₹
A.	Cash flow from Operating Activities		
	Profit and Loss A/c as on 31.3.2011		3,00,000
	Less: Profit and Loss A/c as on 31.3.2010		<u>2,10,000</u>
			90,000
	Add: Transfer to General Reserve	25,000	
	Provision for Tax	96,000	
	Proposed Dividend	<u>1,44,000</u>	<u>2,65,000</u>
	Profit before Tax		3,55,000
	Adjustment for Depreciation:		
	Land and Building	50,000	
	Plant and Machinery	<u>1,20,000</u>	1,70,000
	Profit on Sale of Investments		(15,000)

	Loss on Sale of Plant and Machinery	9,000
	Goodwill written off	20,000
	Interest Expenses	<u>33,000</u>
	Operating Profit before Working Capital Changes	5,72,000
	Adjustment for Working Capital Changes:	
	Decrease in Prepaid Expenses	4,000
	Decrease in Stock	15,000
	Increase in Debtors	(1,27,000)
	Increase in Creditors	<u>30,000</u>
	Cash generated from Operations	4,94,000
	Income tax paid	<u>(71,000)</u>
	Net Cash Inflow from Operating Activities (a)	<u>4,23,000</u>
B.	Cash flow from Investing Activities	
	Sale of Investment	35,000
	Sale of Plant and Machinery	36,000
	Purchase of Plant and Machinery	<u>(2,25,000)</u>
	Net Cash Outflow from Investing Activities (b)	<u>(1,54,000)</u>
C.	Cash Flow from Financing Activities	
	Issue of Preference Shares	1,00,000
	Premium received on Issue of Securities	25,000
	Redemption of Debentures at premium	(2,20,000)
	Dividend paid	(1,36,000)
	Interest paid to Debenture holders	<u>(33,000)</u>
	Net Cash Outflow from Financing Activities (c)	<u>(2,64,000)</u>
	Net increase in Cash and Cash Equivalents during the year (a + b + c)	5,000
	Cash and Cash Equivalents at the beginning of the year	<u>88,000</u>
	Cash and Cash Equivalents at the end of the year	<u>93,000</u>

Working Notes:**1. Provision for the Tax Account**

		₹			₹
To	Bank (paid)	71,000	By	Balance b/d	80,000
To	Balance c/d	<u>1,05,000</u>	By	Profit and Loss a/c	<u>96,000</u>
		<u>1,76,000</u>			<u>1,76,000</u>

2. Investment Account

		₹			₹
To	Balance b/d	2,40,000	By	Bank a/c (b/f)	35,000
To	Profit and Loss (profit on sale)	<u>15,000</u>	By	Balance c/d	<u>2,20,000</u>
		<u>2,55,000</u>			<u>2,55,000</u>

3. Plant and Machinery Account

		₹			₹
To	Balance b/d	6,00,000	By	Bank (sale)	36,000
To	Bank a/c (Purchase b/f)	2,25,000	By	Profit and Loss a/c (Loss on sale)	9,000
			By	Depreciation	1,20,000
			By	Balance c/d	<u>6,60,000</u>
		<u>8,25,000</u>			<u>8,25,000</u>

(ii) Schedule of Changes in Working Capital

Particulars	31 st March		Change in Working Capital	
	2010 ₹	2011 ₹	Increase ₹	Decrease ₹
Current Assets				
Stock	4,00,000	3,85,000	-	15,000
Debtors	2,88,000	4,15,000	1,27,000	-
Prepaid Expenses	15,000	11,000	-	4,000
Cash and Bank	<u>88,000</u>	<u>93,000</u>	5,000	-
Total (A)	<u>7,91,000</u>	<u>9,04,000</u>		
Current Liabilities				
Creditors	<u>1,85,000</u>	<u>2,15,000</u>	-	30,000
Total (B)	<u>1,85,000</u>	<u>2,15,000</u>		
Working Capital (A – B)	6,06,000	6,89,000		
Increase in Working Capital	<u>83,000</u>	<u>—</u>	<u>—</u>	<u>83,000</u>
	<u>6,89,000</u>	<u>6,89,000</u>	<u>1,32,000</u>	<u>1,32,000</u>

3 (a)

Pattern of raising capital =	0.25 × 20,00,000
Debt =	5,00,000
Equity =	15,00,000
Equity fund (₹ 15,00,000)	
Retained earning =	₹ 4,00,000
Equity (additional) =	<u>₹ 11,00,000</u>
Total =	<u>₹ 15,00,000</u>
Debt fund (₹ 5,00,000)	
10% debt =	₹ 2,00,000
13% debt =	<u>₹ 3,00,000</u>
Total =	<u>₹ 5,00,000</u>

(i) $K_d = \text{Total Interest} (1 - t) / ₹ 5,00,000$
 $= [20,000 + 39,000] (1 - 0.3) / 5,00,000$ or $(41,300 / 5,00,000) \times 100 = 8.26\%$

(ii) $K_e = \text{EPS} \times \text{payout} / \text{mp} + g = 12 (50\%) / 60 \times 100 + 10\%$
 $= 10\% + 10\% = 20\%$

$K_r = K_e (1 - t_p) = 20(1 - 0.2) = 16\%$

(iii) **Weighted average cost of capital**

	Amount	After tax	Cost
Equity Capital	11,00,000	20.00%	2,20,000
Retained earning	4,00,000	16.00%	64,000
Debt	<u>5,00,000</u>	8.26%	<u>41,300</u>
Total	<u>20,00,000</u>		<u>3,25,300</u>

$K_o = (3,25,300 / 20,00,000) \times 100 = 16$

(b) **Statement Showing Cost and Sales for the First Year**

Annual Production Capacity	60,000 units
Production	40,000 units
Sales	35,000 units

Particulars	₹
Sales Revenue (₹ 80 × 35,000)	28,00,000
Cost of Production:	

Materials @ ₹ 20 per unit	8,00,000
Direct Labour @ ₹ 15 per unit	6,00,000
Manufacturing Overheads	
Variable @ ₹ 15 per unit	6,00,000
Fixed (based on production capacity 60,000 units ´ ₹ 10)	<u>6,00,000</u>
Cost of Production	26,00,000
Less: Closing Stock (40,000 – 35,000 = 5,000 units)	
$\text{₹ } \frac{26,00,000}{40,000} \times 5,000$	<u>3,25,000</u>
Cost of Goods Sold	22,75,000
Add: Selling & Distribution Overheads	
Variable @ ₹ 3 ´ 35,000 units = 1,05,000	
Fixed (₹ 1 ´ 60,000 units) = 60,000	<u>1,65,000</u>
Cost of Sales	<u>24,40,000</u>
Profit	<u>3,60,000</u>

Statement Showing Working Capital Requirement

		₹
A.	Current Assets	
	Stock of Raw Materials (₹ 8,00,000 ´ 3/12)	2,00,000
	Stock of Finished Goods	3,25,000
	Debtors at Cost (₹ 24,40,000 ´ 3/24)	3,05,000
	Cash and Bank	<u>60,000</u>
	Total (A)	<u>8,90,000</u>
B.	Current Liabilities	
	Creditors for Materials (₹ 10,00,000 ´ 4/12)	3,33,333
	Creditors for Expenses (₹ 13,65,000 ´ 1/24)	56,875
	Outstanding Wages (₹ 6,00,000 ´ 1/12)	<u>50,000</u>
	Total (B)	<u>4,40,208</u>
	Working Capital Requirement before Contingencies (A – B)	4,49,792
	Add: Provision for Contingencies (₹ 4,49,792 ´ 1/9)	<u>49,977</u>
	Estimated Working Capital Requirement	<u>4,99,769</u>

Workings Notes:

Purchase of Raw Material during the first year	₹
Raw Material consumed during the year	8,00,000
Add: Closing Stock of Raw Materials (3 months consumption)	<u>2,00,000</u>
	10,00,000
Less: Opening Stock of Raw Material	<u>Nil</u>
Purchases during the year	<u>10,00,000</u>

4 (a) Computation of Rate of Interest and Revised Maturity Value

Principal = ₹ 10,000

Amount = ₹ 12,625

$$10,000 = \frac{12,625}{(1+i)^4}$$

$$P_n = A \times (PVF_{n,i})$$

$$10,000 = 12,625 (PVF_{4,i})$$

$$0.7921 = (PVF_{4,i})$$

According to the Table on Present Value Factor ($PVF_{4,i}$) of a lump sum of ₹ 1, a PVF of 0.7921 for half year at interest (i) = 6 percent. Therefore, the annual interest rate is $2 \times 0.06 = 12$ percent.

i = 6% for half year

i = 12% for full year.

Therefore, Rate of Interest = 12% per annum

$$\begin{aligned} \text{Revised Maturity Value} &= 10,000 \left(1 + \frac{12}{100} \right)^4 \\ &= 10,000 \left(1 + \frac{3}{100} \right)^8 \\ &= 10,000 (1.03)^8 \\ &= 10,000 \times 1.267 \text{ [Considering } (CVF_{8,3}) = 1.267] \end{aligned}$$

Revised Maturity Value = 12,670.

(b) Computation of Cost of Retained Earnings (K_r)

$$K_r = k (1-T_p) (1-B)$$

$$K_r = 0.10 (1-0.30) (1-0.03)$$

$$= 0.10 (0.70) \times (0.97)$$

= 0.0679 or 6.79%

Cost of Retained Earnings = 6.79%

(c) Computation of Effective Cost of Factoring

Average level of Receivables = $12,00,000 \times 90/360$ 3,00,000
 Factoring Commission = $3,00,000 \times 2/100$ 6,000
 Factoring Reserve = $3,00,000 \times 10/100$ 30,000
 Amount Available for Advance = ₹ 3,00,000 - (6,000 + 30,000) 2,64,000
 Factor will deduct his interest @ 16% :-
 Interest = $\frac{₹ 2,64,000 \times 16 \times 90}{360 \times 100} = ₹ 10,560$

Advance to be paid = ₹ 2,64,000 – ₹ 10,560 = ₹ 2,53,440

Annual Cost of Factoring to the Firm:	₹
Factoring Commission (₹ 6,000 $\times$ 360/90)	24,000
Interest Charges (₹ 10,560 $\times$ 360/90)	<u>42,240</u>
Total	<u>66,240</u>
Firm's Savings on taking Factoring Service:	₹
Cost of Administration Saved	50,000
Cost of Bad Debts (₹ 12,00,000 $\times$ 1.5/100) avoided	<u>18,000</u>
Total	<u>68,000</u>
Net Benefit to the Firm (₹ 68,000 – ₹ 66,240)	<u>1,760</u>
Effective Cost of Factoring = $\frac{₹ 66,240 \times 100}{2,53,440}$	26.136%

Effective Cost of Factoring = 26.136%