

MOCK TEST PAPER – 1
INTERMEDIATE (IPC): GROUP – I
PAPER – 3: COST ACCOUNTING AND FINANCIAL MANAGEMENT
SUGGESTED ANSWERS/ HINTS

1. (a) (i) Break-even sales = $\frac{\text{Fixed Cost}}{\text{P/V Ratio}}$
- P/V Ratio = $\frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$ or, $\frac{\text{Rs. } 37,50,000}{\text{Rs. } 7,80,60,000 - \text{Rs. } 4,80,60,000} \times 100$
- Or, $\frac{\text{Rs. } 37,50,000}{\text{Rs. } 3,00,00,000} \times 100$ or, 12.5%
- Break-even sales = $\frac{\text{Rs. } 28,50,000}{12.5\%} = \text{Rs. } 2,28,00,000$
- (ii) Profit/ loss = Contribution – Fixed Cost
 = Rs.12,00,00,000 × 12.5% - Rs.28,50,000
 = Rs.1,50,00,000 – Rs.28,50,000 = Rs.1,21,50,000
- (iii) To earn same amount of profit in 2015-16 as was in 2014-15, it has to earn the same amount of contribution as of 2014-15.
- Sales – Variable cost = Contribution equal to 2014-15 contribution
 Contribution in 2014-15 = Sales in 2014-15 × P/V Ratio in 2014-15
 = Rs.7,80,60,000 × 12.5% = Rs.97,57,500
- Selling price per unit in 2014-15 = $\frac{\text{Sales in 2014 – 15}}{\text{No. of units sold in 2014 – 15}}$
- = $\frac{\text{Sales in 2014 – 15}}{\text{Sales}(1 - \text{P/V Ratio}) \times \text{P/V Ratio}}$
- = $\frac{\text{Rs. } 7,80,60,000}{\text{Rs. } 7,80,60,000(1 - 12.5\%) \times 12.5\%}$
- = $\frac{\text{Rs. } 7,80,60,000}{85,37,812.50 \text{ units}} = \text{Rs. } 9.14$

$$\text{Variable cost per unit in 2014-15} = \frac{1}{P/V \text{ Ratio}} = \frac{100}{12.5} = \text{Rs. } 8$$

Let the number of units to be sold in 2015-16 = X

Sales in 2015-16 – Variable cost in 2015-16 = Desired Contribution

$$(90\% \text{ of Rs. } 9.14) X - \text{Rs. } 8 X = \text{Rs. } 97,57,500$$

$$\text{Or, } 8.226 X - 8 X = 97,57,500$$

$$\text{Or, } X = 4,31,74,778.76 \text{ units}$$

Therefore, Sales volume required to earn a profit equals to 2014-15 profit

$$= \text{Rs. } 8.226 \times 4,31,74,778.76 \text{ units} = \text{Rs. } 35,51,55,730$$

(b) (i) Optimum run size or Economic Batch Quantity (EBQ) = $\sqrt{\frac{2 \times D \times S}{C}}$

Where, D = Annual demand i.e. 1.15% of 8,00,00,000 = 9,20,000 units

S = Set-up cost per run = Rs. 3,500

C = Inventory holding cost per unit per annum

$$= \text{Rs. } 1.5 \times 12 \text{ months} = \text{Rs. } 18$$

$$\text{EBQ} = \sqrt{\frac{2 \times 9,20,000 \text{ units} \times \text{Rs. } 3,500}{\text{Rs. } 18}} = 18,915 \text{ units}$$

(ii) Calculation of Total Cost of set-up and inventory holding

	Batch size	No. of set-ups	Set-up Cost (Rs.)	Inventory holding cost (Rs.)	Total Cost (Rs.)
A	40,000 units	23 $\left(\frac{9,20,000}{40,000}\right)$	80,500 (23 × Rs. 3,500)	3,60,000 $\left(\frac{40,000 \times \text{Rs. } 18}{2}\right)$	4,40,500
B	18,915 units	49 $\left(\frac{9,20,000}{18,915}\right)$	1,71,500 (49 × Rs. 3,500)	1,70,235 $\left(\frac{18,915 \times \text{Rs. } 18}{2}\right)$	3,41,735
	Extra Cost (A – B)				98,765

(c) Working notes:

(i) Current assets and Current liabilities computation:

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

$$\text{Or, } \frac{\text{Current Assets}}{2.5} = \frac{\text{Current Liabilities}}{1} = k \text{ (say)}$$

$$\text{Or, Current Assets} = 2.5 k \text{ and Current Liabilities} = k$$

$$\text{Or, Working capital} = (\text{Current Assets} - \text{Current Liabilities})$$

$$\text{Or, Rs. 2,40,000} = k(2.5 - 1) = 1.5 k$$

$$\text{Or, } k = \text{Rs. 1,60,000}$$

$$\therefore \text{Current Liabilities} = \text{Rs. 1,60,000}$$

$$\text{Current Assets} = \text{Rs. 1,60,000} \times 2.5 = \text{Rs. 4,00,000}$$

(ii) Computation of stock

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

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

$$\text{Or, } 1.5 \times \text{Rs. 1,60,000} = \text{Rs. 4,00,000} - \text{Stock}$$

$$\text{Or, Stock} = \text{Rs. 1,60,000}$$

(iii) Computation of Proprietary fund; Fixed assets; Capital and Sundry creditors

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

$$\therefore \text{Fixed assets} = 0.75 \text{ Proprietary fund}$$

$$\text{and Net working capital} = 0.25 \text{ Proprietary fund}$$

$$\text{Or, } \text{Rs. 2,40,000}/0.25 = \text{Proprietary fund}$$

$$\text{Or, Proprietary fund} = \text{Rs. 9,60,000}$$

$$\text{and Fixed assets} = 0.75 \text{ proprietary fund}$$

$$= 0.75 \times \text{Rs. 9,60,000}$$

$$= \text{Rs. 7,20,000}$$

$$\begin{aligned}
 \text{Capital} &= \text{Proprietary fund – Reserves \& Surplus} \\
 &= \text{Rs.9,60,000 – Rs.1,60,000} \\
 &= \text{Rs.8,00,000} \\
 \text{Sundry creditors} &= (\text{Current liabilities – Bank overdraft}) \\
 &= (\text{Rs.1,60,000 – Rs.40,000}) = \text{Rs.1,20,000}
 \end{aligned}$$

Balance Sheet

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

(d) Equated Monthly Installment (EMI) = $P \times r \times \frac{(1+r)^n}{(1+r)^n - 1}$

Where, P = Rs.3,00,000

$$r = 0.18/12 = 0.015$$

$$n = 1 \times 12 = 12$$

$$\text{EMI} = \text{Rs.3,00,000} \times 0.015 \times \frac{(1+0.015)^{12}}{(1+0.015)^{12} - 1} = \text{Rs. 4,500} \times \frac{1.1956}{0.1956} = \text{Rs. 27,504}$$

Calculation of Total Interest to be paid upto the end of sixth month

End of month	Opening Balance (Rs.)	Payment (Rs.)	Interest (Rs.)	Principle Repayment (Rs.)	Outstanding at the end (Rs.)
	A	B = EMI	C = A × 0.015	D = B - C	E = A - D
1	3,00,000	27,504	4,500	23,004	2,76,996
2	2,76,996	27,504	4,155	23,349	2,53,647
3	2,53,647	27,504	3,805	23,699	2,29,948
4	2,29,948	27,504	3,449	24,055	2,05,893
5	2,05,893	27,504	3,088	24,416	1,81,477
6	1,81,477	27,504	2,722	24,782	1,56,695
			21,719		

Total interest upto the end of sixth month will be Rs.21,719

2. (a)

Process-I A/c

Particulars	Qty. (kgs)	Amount (Rs.)	Particulars	Qty. (kgs)	Amount (Rs.)
To Material A	6,000	3,00,000	By Normal loss	500	8,000
To Material B	4,000	4,00,000	By Process-II A/c	9,200	7,38,857
To Labour	--	21,500	By Abnormal loss A/c	300	24,093
To Overheads ($\frac{\text{Rs. } 92,000 \times 430 \text{ hrs}}{800 \text{ hrs}}$)	--	49,450			
	10,000	7,70,950		10,000	7,70,950

$$* \frac{\{(\text{Rs. } 3,00,000 + \text{Rs. } 4,00,000 + \text{Rs. } 21,500 + \text{Rs. } 49,450) - \text{Rs. } 8,000\}}{(10,000 - 500) \text{ units}}$$

$$= \frac{\text{Rs. } 7,70,950 - \text{Rs. } 8,000}{9,500 \text{ units}} = \text{Rs. } 80.3105$$

Process-II A/c

Particulars	Qty. (kgs)	Amount (Rs.)	Particulars	Qty. (kgs)	Amount (Rs.)
To Process-I A/c	9,200	7,38,857	By Normal loss	1,000	--
To Material C	6,600	8,25,000	By Packing Dept. A/c (See the working notes)	18,000	18,42,496
To Material D	4,200	3,15,000	By WIP A/c (See the working notes)	1,000	1,00,711
To Flavouring essence	--	3,300			
To Labour	--	18,500			
To Overheads ($\frac{\text{Rs. } 92,000 \times 370 \text{ hrs}}{800 \text{ hrs}}$)	--	42,550			
	20,000	19,43,207		20,000	19,43,207

Abnormal loss A/c

Particulars	Qty. (kgs)	Amount (Rs.)	Particulars	Qty. (kgs)	Amount (Rs.)
To Process-I A/c	300	24,093	By Bank	300	4,800
			By Costing Profit & Loss A/c	--	19,293
	300	24,093		300	24,093

Working Notes:

Calculation of Equivalent Production units

Input	Units	Output	Units	Process-I		Mat-C & D		Labour & OH	
				(%)	Units	(%)	Units	(%)	Units
Process-I	9,200	Transferred to Packing.	18,000	100	18,000	100	18,000	100	18,000
Mat-C	6,600	Closing WIP	1,000	100	1,000	100	1,000	50	500
Mat-D	4,200	Normal loss	1,000	--	--	--	--	--	--
	20,000		20,000		19,000		19,000		18,500

Calculation of Unit cost

Cost component	Amount (Rs.)	Equivalent units	Cost per unit (Rs.)
Transferred-in	7,38,857	19,000	38.8872
Material-C	8,25,000	19,000	43.4211
Material-D	3,15,000	19,000	16.5789
Flavouring essence	3,300	19,000	0.1737
Total Material Cost	18,82,157	19,000	99.0609
Labour	18,500	18,500	1.0000
Overheads	42,550	18,500	2.3000
Total Cost	19,43,207		102.3609

Value of Materials transferred to Packing Department

$$= 18,000 \text{ unit} \times \text{Rs.}102.3609 = 18,42,496$$

Value of WIP : For Materials- 1,000 units \times Rs.99.0609 = Rs.99,061

For Labour & Overheads 500 units \times Rs.3.30 = Rs.1,650 Rs.1,00,711

(b) (i) Estimate of the Requirement of Working Capital

	(Rs.)	(Rs.)
A. Current Assets:		
Raw material stock (Refer to Working note 3)	6,64,615	
Work in progress stock (Refer to Working note 2)	5,00,000	
Finished goods stock (Refer to Working note 4)	13,60,000	
Debtors (Refer to Working note 5)	29,53,846	
Cash and Bank balance	<u>25,000</u>	55,03,461
B. Current Liabilities:		
Creditors for raw materials (Refer to Working note 6)	7,15,740	
Creditors for wages (Refer to Working note 7)	<u>91,731</u>	8,07,471
Net Working Capital (A - B)		<u>46,95,990</u>

(ii) The maximum permissible bank finance as per Tandon Committee Norms

First Method:

75% of the net working capital financed by bank i.e. 75% of Rs.46,95,990

(Refer to (i) above)

= Rs. 35,21,993

Second Method:

(75% of Current Assets) - Current liabilities (i.e. 75% of Rs. 55,03,461) - Rs. 8,07,471

(Refer to (i) above)

= Rs. 41,27,596 - Rs. 8,07,471

= Rs. 33,20,125

Working Notes:

1. Annual cost of production

	Rs.
Raw material requirements (1,04,000 units × Rs. 80)	83,20,000
Direct wages (1,04,000 units × Rs. 30)	31,20,000
Overheads (exclusive of depreciation)(1,04,000 × Rs. 60)	<u>62,40,000</u>
	<u>1,76,80,000</u>

2. Work in progress stock

	Rs.
Raw material requirements (4,000 units × Rs. 80)	3,20,000
Direct wages (50% × 4,000 units × Rs. 30)	60,000
Overheads (50% × 4,000 units × Rs. 60)	<u>1,20,000</u>
	<u>5,00,000</u>

3. Raw material stock

It is given that raw material in stock is average 4 weeks consumption. Since, the company is newly formed, the raw material requirement for production and work in progress will be issued and consumed during the year.

Hence, the raw material consumption for the year (52 weeks) is as follows:

	Rs.
For Finished goods	83,20,000
For Work in progress	<u>3,20,000</u>
	<u>86,40,000</u>
Raw material stock	$\frac{\text{Rs. } 86,40,000}{52 \text{ weeks}} \times 4 \text{ weeks}$ i.e. Rs. 6,64,615

4. Finished goods stock

8,000 units @ Rs. 170 per unit = Rs. 13,60,000

5. Debtors for sale

Credit allowed to debtors	Average 8 weeks
Credit sales for year (52 weeks) i.e. (1,04,000 units - 8,000 units)	96,000 units
Selling price per unit	Rs. 200

Credit sales for the year (96,000 units × Rs. 200) Rs. 1,92,00,000
 Debtors $\frac{₹1,92,00,000}{52 \text{ weeks}} \times 8 \text{ weeks}$ i.e. Rs. 29,53,846

(Debtor can also be calculated based on Cost of goods sold)

6. Creditors for raw material:

Credit allowed by suppliers Average 4 weeks
 Purchases during the year (52 weeks) i.e. Rs. 93,04,615
 (Rs. 83,20,000 + Rs. 3,20,000 + Rs. 6,64,615)
 (Refer to Working notes 1,2 and 3 above)
 Creditors $\frac{₹93,04,615}{52 \text{ weeks}} \times 4 \text{ weeks}$ i.e. Rs. 7,15,740

7. Creditors for wages

Lag in payment of wages Average $1 \frac{1}{2}$ weeks
 Direct wages for the year (52 weeks) i.e. Rs. 31,80,000
 (Rs. 31,20,000 + Rs. 60,000)
 (Refer to Working notes 1 and 2 above)
 Creditors $\frac{₹31,80,000}{52 \text{ weeks}} \times 1 \frac{1}{2} \text{ weeks}$ i.e. Rs. 91,731

3. (a) Material Price Variance = Actual Quantity (Std. Price – Actual Price)

X = 12,500 units (Rs.40 – Rs.44) = 50,000 (A)
 Y = 18,000 units (Rs.30 – Rs.28) = 36,000 (F)
 Z = 88,500 units (Rs.10 – Rs.12) = 1,77,000 (A) 1,91,000 (A)

Material Usage Variance = Std. Price (Std. Qty – Actual Qty.)

X = Rs.40 (6,000 × 2 – 12,500) = 20,000 (A)
 Y = Rs.30 (6,000 × 3 – 18,000) = Nil
 Z = Rs.10 (6,000 × 15 – 88,500) = 15,000 (F) 5,000 (A)

Material Mix Variance = Std. Price (Revised Std. Qty. – Actual Qty.)

X = Rs.40 ($\frac{1,19,000 \times 2}{20} - 12,500$) = 24,000 (A)

$$Y = \text{Rs.}30 \left(\frac{1,19,000 \times 3}{20} - 18,000 \right) = 4,500 \text{ (A)}$$

$$Z = \text{Rs.}10 \left(\frac{1,19,000 \times 15}{20} - 88,500 \right) = \underline{7,500 \text{ (F)}} \quad 21,000 \text{ (A)}$$

Material Yield Variance = Std. Price (Std. Qty. – Revised Std. Qty.)

$$X = \text{Rs.}40 \left(6,000 \times 2 - \frac{1,19,000 \times 2}{20} \right) = 4,000 \text{ (F)}$$

$$Y = \text{Rs.}30 \left(6,000 \times 3 - \frac{1,19,000 \times 3}{20} \right) = 4,500 \text{ (F)}$$

$$Z = \text{Rs.}10 \left(6,000 \times 15 - \frac{1,19,000 \times 15}{20} \right) = \underline{7,500 \text{ (F)}} \quad 16,000 \text{ (F)}$$

Labour Rate Variance = Actual Hours (Std. Rate – Actual Rate)

$$= 2,500 \text{ hours (Rs.55 – Rs.58)} = 7,500 \text{ (A)}$$

Labour Efficiency Variance = Std. Rate (Std. Hours – Actual Hours)

$$= \text{Rs.}55 (6,000 \times 3 - 17,500) = 27,500 \text{ (F)}$$

(b) (1) Computation of Net Present Values of Projects

Year	Cash flows		Disct. factor @ 16 %	Discounted Cash flow	
	Project A (Rs.)	Project B (Rs.)		Project A (Rs.)	Project B (Rs.)
	(1)	(2)	(3)	(3) × (1)	(3) × (2)
0	(1,35,000)	(2,40,000)	1.000	(1,35,000)	(2,40,000)
1	--	60,000	0.862	--	51,720
2	30,000	84,000	0.743	22,290	62,412
3	1,32,000	96,000	0.641	84,612	61,536
4	84,000	1,02,000	0.552	46,368	56,304
5	84,000	90,000	0.476	39,984	42,840
Net present value				58,254	34,812

(2) Computation of Cumulative Present Values of Projects Cash inflows

Year	Project A		Project B	
	PV of cash inflows (Rs.)	Cumulative PV (Rs.)	PV of cash inflows (Rs.)	Cumulative PV (Rs.)
1	--	--	51,720	51,720
2	22,290	22,290	62,412	1,14,132

3	84,612	1,06,902	61,536	1,75,668
4	46,368	1,53,270	56,304	2,31,972
5	39,984	1,93,254	42,840	2,74,812

(i) **Discounted payback period:** (Refer to Working note 2)

Cost of Project A = Rs.1,35,000

Cost of Project B = Rs. 2,40,000

Cumulative PV of cash inflows of Project A after 4 years = Rs. 1,53,270

Cumulative PV of cash inflows of Project B after 5 years = Rs. 2,74,812

A comparison of projects cost with their cumulative PV clearly shows that the project A's cost will be recovered in less than 4 years and that of project B in less than 5 years. The exact duration of discounted payback period can be computed as follows:

	Project A	Project B
Excess PV of cash inflows over the project cost (Rs.)	18,270 (Rs.1,53,270 – Rs. 1,35,000)	34,812 (Rs. 2,74,812 – Rs. 2,40,000)
Computation of period required to recover excess amount of cumulative PV over project cost (Refer to Working note 2)	0.39 year (Rs. 18,270 ÷ Rs. 46,368)	0.81 years (Rs. 34,812 ÷ Rs. 42,840)
Discounted payback period	3.61 year (4 – 0.39) years	4.19 years (5 – 0.81) years

(ii) **Profitability Index:**
$$= \frac{\text{Sum of discounted cash inflows}}{\text{Initian cash outlay}}$$

$$\text{Profitability Index (for Project A)} = \frac{\text{Rs.1,93,254}}{\text{Rs.1,35,000}} = 1.43$$

$$\text{Profitability Index (for Project B)} = \frac{\text{Rs.2,74,812}}{\text{Rs.2,40,000}} = 1.15$$

(iii) **Net present value (for Project A)** = Rs. 58,254 (Refer to Working note 1)

Net present value (for Project B) = Rs. 34,812

4. (a) Effective machine hours = 200 hours × 75% = 150 hours

Computation of Comprehensive Machine Hour Rate

	Per month (Rs.)	Per hour (Rs.)
Fixed cost		
Supervision charges	18,000.00	
Electricity and lighting	9,500.00	
Insurance of Plant and building (Rs.18,250 ÷ 12)	1,520.83	
Other General Expenses (Rs.17,500 ÷ 12)	1,458.33	
Depreciation (Rs.64,800 ÷ 12)	5,400.00	
	35,879.16	239.19
Direct Cost		
Repairs and maintenance	17,500.00	116.67
Power	65,000.00	433.33
Wages of machine man		139.27
Wages of Helper		109.41
Machine Hour rate (Comprehensive)		1,037.87

Wages per machine hour

	Machine man	Helper
Wages for 200 hours		
Machine-man (Rs.400 × 25)	Rs.10,000.00	---
Helper (Rs.275 × 25)	---	Rs.6,875.00
Dearness Allowance (DA)	Rs.4,575.00	Rs.4,575.00
	Rs.14,575.00	Rs.11,450.00
Production bonus (1/3 of Basic and DA)	4,858.33	3,816.67
Leave wages (10% of Basic and DA)	1,457.50	1,145.00
	20,890.83	16,411.67
Effective wage rate per machine hour	Rs.139.27	Rs.109.41

(b) Calculation of Earning per share for three alternatives to finance the project

Particulars	Alternatives		
	I To raise debt of Rs. 2,50,000 and equity of Rs. 22,50,000	II To raise debt of Rs. 10,00,000 and equity of Rs.15,00,000	III To raise debt of Rs.15,00,000 and equity of Rs. 10,00,000
	(Rs.)	(Rs.)	(Rs.)
Earnings before interest and tax	5,00,000	5,00,000	5,00,000
Less: Interest on debt at the rate of	25,000 (10% on Rs.2,50,000)	1,37,500 (10% on Rs.2,50,000) (15% on Rs. 7,50,000)	2,37,500 (10% on Rs. 2,50,000) (15% on Rs.7,50,000) (20% on Rs.5,00,000)
Earnings before tax	4,75,000	3,62,500	2,62,500
Less: Tax @ 50%	2,37,500	1,81,250	1,31,250
Earnings after tax: (A)	2,37,500	1,81,250	1,31,250
Number of shares: (B) (Equity/ Market price of Share)	15,000 (Rs.22,50,000/Rs.150)	10,000 (Rs.15,00,000/Rs.150)	8,000 (Rs.10,00,000/Rs.125)
Earnings per share: [(A)/ (B)]	15.833	18.125	16.406

The company should raise Rs.10,00,000 from debt and Rs.15,00,000 by issuing equity shares, as it gives highest EPS.

5. (a) **Cost plus contract:** Under cost plus contract, the contract price is ascertained by adding a percentage of profit to the total cost of the work. Such types of contracts are entered into when it is not possible to estimate the contract cost with reasonable accuracy due to unstable condition of material, labour services etc.

Following are the advantages of cost plus contract:

- (i) The contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on the contract.
- (ii) It is useful specially when the work to be done is not definitely fixed at the time of making the estimate.

(iii) Contractee can ensure himself about the 'cost of contract' as he is empowered to examine the books and documents of the contractor to ascertain the veracity of the cost of contract.

(b) Apportionment of Joint Cost amongst Joint Products using:

Market value at the point of separation

This method is used for apportionment of joint costs to joint products upto the split off point. It is difficult to apply if the market value of the product at the point of separation is not available. It is useful method where further processing costs are incurred disproportionately.

Net realizable value Method

From the sales value of joint products (at finished stage) the followings are deducted:

- Estimated profit margins
- Selling & distribution expenses, if any
- Post split off costs.

The resultant figure so obtained is known as net realizable value of joint products. Joint costs are apportioned in the ratio of net realizable value.

(c) Trade credit and accruals as source of working capital refers to credit facility given by suppliers of goods during the normal course of trade. It is a short term source of finance. SSI firms in particular are heavily dependent on this source for financing their working capital needs. The major advantages of trade credit are – easy availability, flexibility and informality.

There can be an argument that trade credit is a cost free source of finance. But it is not. It involves implicit cost. The supplier extending trade credit incurs cost in the form of opportunity cost of funds invested in trade receivables. Generally, the supplier passes on these costs to the buyer by increasing the price of the goods or alternatively by not extending cash discount facility.

(d) Bridge finance refers, normally, to loans taken by the business, usually from commercial banks for a short period, pending disbursement of term loans by financial institutions, normally it takes time for the financial institution to finalise procedures of creation of security, tie-up participation with other institutions etc. even though a positive appraisal of the project has been made. However, once the loans are approved in principle, firms in order not to lose further time in starting their projects arrange for bridge finance. Such temporary loan is normally repaid out of the proceeds of the principal term loans. It is secured by hypothecation of moveable assets, personal guarantees and demand promissory notes. Generally rate of interest on bridge finance is higher as compared with that on term loans.

6. (a) (i) Annual Cost Statement of three vehicles

	(Rs.)
Diesel $\{(1,34,784 \text{ km.} \div 4 \text{ km}) \times \text{Rs. } 40\}$ (Refer to Working Note 1)	13,47,840
Oil & sundries $\{(1,34,784 \text{ km.} \div 100 \text{ km.}) \times \text{Rs. } 250\}$	3,36,960
Maintenance $\{(1,34,784 \text{ km.} \times \text{Rs. } 0.25) + \text{Rs. } 6,000\}$ (Refer to Working Note 2)	39,696
Drivers' salary $\{(\text{Rs. } 12,000 \times 12 \text{ months}) \times 3 \text{ trucks}\}$	4,32,000
Licence and taxes (Rs. 5,000 \times 3 trucks)	15,000
Insurance	5,000
Depreciation $\{(\text{Rs. } 29,00,000 \div 10 \text{ years}) \times 3 \text{ trucks}\}$	8,70,000
General overhead	1,15,600
Total annual cost	31,62,096

(ii) Cost per km. run

$$\begin{aligned} \text{Cost per kilometer run} &= \frac{\text{Total annual cost of vehicles}}{\text{Total kilometre travelled annually}} \text{ (Refer to Working Note 1)} \\ &= \frac{\text{₹ } 31,62,096}{1,34,784 \text{ Kms}} = \text{₹ } 23.46 \end{aligned}$$

(iii) Freight rate per tonne km (to yield a profit of 10% on freight)

$$\begin{aligned} \text{Cost per tonne km.} &= \frac{\text{Total annual cost of three vehicles}}{\text{Total effective tonnes kms. per annum}} \text{ (Refer to Working Note 1)} \\ &= \frac{\text{Rs. } 31,62,096}{6,06,528 \text{ kms}} = \text{Rs. } 5.21 \end{aligned}$$

$$\text{Freight rate per tonne km.} \left(\frac{\text{Rs. } 5.21}{0.9} \right) \times 1 = \text{Rs. } 5.79$$

Working Notes:

1. Total kilometer travelled and Commercial tonnes kilometer (load carried) by three trucks in one year

Truck	One way distance in kms	No. of trips	Total distance covered in km per day (with load)	Total distance covered in km per day (up & down)	Load carried per trip / day in tonnes	Total effective tonnes km
	a	b	c = a × b	d = c × 2	e	f = 27/3 × c
1	16	4	64	128	6	576
2	40	2	80	160	9	720
3	30	3	90	180	12	810
Total			234	468	27	2,106

Total kilometre travelled by three trucks in one year

$$(468 \text{ km.} \times 24 \text{ days} \times 12 \text{ months}) = 1,34,784$$

Total effective tonnes kilometre of load carried by three trucks during one year

$$(2,106 \text{ tonnes km.} \times 24 \text{ days} \times 12 \text{ months}) = 6,06,528 \text{ tonne-km}$$

2. Fixed and variable component of maintenance cost:

$$\begin{aligned} \text{Variable maintenance cost per km.} &= \frac{\text{Difference in maintenance cost}}{\text{Difference in distance travelled}} \\ &= \frac{\text{Rs. } 46,050 - \text{Rs. } 45,175}{1,60,200 \text{ kms} - 1,56,700 \text{ kms}} = \text{Rs. } 0.25 \end{aligned}$$

Fixed maintenance cost = Total maintenance cost - Variable maintenance cost

$$= \text{Rs. } 46,050 - 1,60,200 \text{ kms} \times \text{Rs. } 0.25 = \text{Rs. } 6,000$$

(b) Working Notes:

Company A

$$\text{Financial leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{3}{1} = \text{Or, EBIT} = 3 \times \text{EBT} \quad \dots\dots (1)$$

$$\text{Again EBIT} - \text{Interest} = \text{EBT}$$

$$\text{Or, EBIT} - 200 = \text{EBT} \quad \dots\dots(2)$$

Taking (1) and (2) we get

$$3 \text{ EBT} - 200 = \text{EBT}$$

$$\text{Or, } 2 \text{ EBT} = 200 \text{ or EBT} = \text{Rs.100}$$

$$\text{Hence EBIT} = 3\text{EBT} = \text{Rs.300}$$

$$\text{Again we have operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{4}{1}$$

$$\text{EBIT} = \text{Rs. 300, hence we get}$$

$$\text{Contribution} = 4 \times \text{EBIT} = \text{Rs.1,200}$$

$$\text{Now variable cost} = 66\frac{2}{3}\% \text{ on sales}$$

$$\text{Contribution} = 100 - 66\frac{2}{3}\% \text{ i.e. } 33\frac{1}{3}\% \text{ on sales}$$

$$\text{Hence sales} = \frac{1200}{33\frac{1}{3}\%} = \text{Rs. 3,600}$$

Same way EBIT, EBT, contribution and sales for company B can be worked out.

Company B

$$\text{Financial leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{4}{1} \text{ or EBIT} = 4 \text{ EBT} \quad \dots(3)$$

$$\text{Again EBIT} - \text{Interest} = \text{EBT or EBIT} - 300 = \text{EBT} \quad \dots\dots (4)$$

$$\text{Taking (3) and (4) we get, } 4 \text{ EBT} - 300 = \text{EBT}$$

$$\text{Or, } 3 \text{ EBT} = 300 \quad \text{Or, EBT} = 100$$

$$\text{Hence, EBIT} = 4 \times \text{EBT} = 400$$

$$\text{Again we have operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{5}{1}$$

$$\text{EBIT} = 400; \text{ Hence we get contribution} = 5 \times \text{EBIT} = 2,000$$

$$\text{Now variable cost} = 75\% \text{ on sales}$$

$$\text{Contribution} = 100 - 75\% \text{ i.e. } 25\% \text{ on sales}$$

$$\text{Hence Sales} = \frac{2,000}{25\%} = \text{Rs. 8,000}$$

Income Statement

	A (Rs.)	B (Rs.)
Sales	3,600	8,000
Less: Variable Cost	2,400	6,000
Contribution	1200	2,000
Less: Fixed Cost (bal. Fig)	900	1,600
EBIT	300	400
Less: Interest	200	300
EBT	100	100
Less: Tax 45%	45	45
EAT	55	55

7. (a) Effect of overtime payment on productivity: Overtime work should be resorted to only when it is extremely essential because it involves extra cost. The overtime payment increases the cost of production in the following ways:
1. The overtime premium paid is an extra payment in addition to the normal rate.
 2. The efficiency of operators during overtime work may fall and thus output may be less than normal output.
 3. In order to earn more the workers may not concentrate on work during normal time and thus the output during normal hours may also fall.
 4. Reduced output and increased premium of overtime will bring about an increase in cost of production.
- (b) In integrated accounting system cost and financial accounts are kept in the same set of books. Such a system will have to afford full information required for Costing as well as for Financial Accounts. In other words, information and data should be recorded in such a way so as to enable the firm to ascertain the cost (together with the necessary analysis) of each product, job, process, operation or any other identifiable activity. It also ensures the ascertainment of marginal cost, variances, abnormal losses and gains. In fact all information that management requires from a system of Costing for doing its work properly is made available. The integrated accounts give full information in such a manner so that the profit and loss account and the balance sheet can be prepared according to the requirements of law and the management maintains full control over the liabilities and assets of its business.
- Since, only one set of books are kept for both cost accounting and financial accounting purpose so there is no necessity of reconciliation of cost and financial accounts.

- (c) Time value of money means that worth of a rupee received today is different from the worth of a rupee to be received in future. The preference of money now as compared to future money is known as time preference for money.

A rupee today is more valuable than rupee after a year due to several reasons:

- Risk – there is uncertainty about the receipt of money in future.
- Preference for present consumption – Most of the persons and companies in general, prefer current consumption over future consumption.
- Inflation – In an inflationary period a rupee today represents a greater real purchasing power than a rupee a year hence.
- Investment opportunities – Most of the persons and companies have a preference for present money because of availabilities of opportunities of investment for earning additional cash flow.

Many financial problems involve cash flow accruing at different points of time for evaluating such cash flow an explicit consideration of time value of money is required.

- (d) The functions of treasury department management is to ensure proper usage, storage and risk management of liquid funds so as to ensure that the organisation is able to meet its obligations, collect its receivables and also maximize the return on its investments. Towards this end the treasury function may be divided into the following:
- (i) **Cash Management:** The efficient collection and payment of cash both inside the organization and to third parties is the function of treasury department. Treasury normally manages surplus funds in an investment portfolio.
 - (ii) **Currency Management:** The treasury department manages the foreign currency risk exposure of the company. It advises on the currency to be used when invoicing overseas sales. It also manages any net exchange exposures in accordance with the company policy.
 - (iii) **Fund Management:** Treasury department is responsible for planning and sourcing the company's short, medium and long-term cash needs. It also participates in the decision on capital structure and forecasts future interest and foreign currency rates.
 - (iv) **Banking:** Since short-term finance can come in the form of bank loans or through the sale of commercial paper in the money market, therefore, treasury department carries out negotiations with bankers and acts as the initial point of contact with them.

- (v) **Corporate Finance:** Treasury department is involved with both acquisition and disinvestment activities within the group. In addition, it is often responsible for investor relations.
- (e) **Controllable costs and Uncontrollable costs:** Cost that can be controlled, typically by a cost, profit or investment centre manager is called controllable cost. Controllable costs incurred in a particular responsibility centre can be influenced by the action of the executive heading that responsibility centre.

Costs which cannot be influenced by the action of a specified member of an undertaking are known as uncontrollable costs.