

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

1. (a) Total Joint Cost

Particulars	Amount (₹)
Direct Material	60,000
Direct Labour	19,200
Variable Overheads	24,000
Total Variable Cost	1,03,200
Fixed Overheads	64,000
Total joint cost	1,67,200

Apportionment of Joint Costs:

			Product-Ghee	Product-Cream
I.	(i)	Apportionment of Joint Cost on the basis of 'Physical Quantity'	₹ 76,000 $\left(\frac{₹ 1,67,200}{200 + 240 \text{ litre}} \times 200 \right)$	₹ 91,200 $\left(\frac{₹ 1,67,200}{200 + 240 \text{ litre}} \times 240 \right)$
	(ii)	Apportionment of Joint Cost on the basis of 'Contribution Margin Method':		
		- Variable Costs (on basis of physical units)	₹ 46,909 $\left(\frac{₹ 1,03,200}{200 + 240 \text{ litre}} \times 200 \right)$	₹ 56,291 $\left(\frac{₹ 1,03,200}{200 + 240 \text{ litre}} \times 240 \right)$
		Contribution Margin	73,091 (₹600×200 – 46,909)	- 8,291 (₹200×240 – 56,291)
		Fixed Costs*	₹ 64,000	
		Total apportioned cost	₹ 1,10,909	₹ 56,291
II.	(iii)	Profit or Loss:		
		When Joint cost apportioned on basis of physical units		
	A.	Sales Value	₹ 1,20,000	₹ 48,000
	B.	Apportioned joint cost on basis of 'Physical Quantity':	₹ 76,000	₹ 91,200
	A-B	Profit or (Loss)	44,000	(43,200)
		When Joint cost apportioned on basis of 'Contribution Margin Method'		

C	Apportioned joint cost on basis of 'Contribution Margin Method'	₹ 1,10,909	₹ 56,291
A-C	Profit or (Loss)	₹ 9,091	₹ (8,291)

* The fixed cost of ₹ 64,000 is to be apportioned over the joint products- Ghee and Cream in the ratio of their contribution margin but contribution margin of Product- Cream is Negative so fixed cost will be charged to Product- Ghee only.

(b) Computation of machine hour rate of new Machine

	Total (₹)	Per hour (₹)
A. Standing Charges		
I. Insurance Premium ₹ 9,000 × $\frac{1}{9}$	1,000	
II. Rent $\frac{1}{10} \times ₹2,400 \times 12$ months	2,880	
	3,880	0.97*
B. Machine expenses		
I. Repairs and Maintenance (₹ 6,000 ÷ 4,000 hours)		1.50
II. Depreciation $\left[\frac{₹10,00,000 - ₹10,000}{10 \text{ years} \times 4,000 \text{ hours}} \right]$		24.75
III. Electricity (8 units x ₹ 3.75)		30.00
Machine hour rate		57.22

Working Note

Calculation of productive Machine hour rate

Total hours	4,200
Less: Non-Productive hours	<u>200</u>
Effective machine hours	<u>4,000</u>

* ₹ 3,880 ÷ 4,000 hours = ₹ 0.97

(c) 1. Valuation of firms

Particulars	Levered Firm (₹)	Unlevered Firm (₹)
EBIT	60,000	60,000
Less: interest (1,50,000 x 10%)	15,000	Nil
Earnings available to Equity Shareholder/Ke	45,000	60,000
	12%	12%
Value of Equity	3,75,000	5,00,000
Debt	1,50,000	Nil
Value of Firm	5,25,000	5,00,000

Value of Levered company is more than that of unlevered company. Therefore, investor will sell his shares in levered company and buy shares in unlevered company. To maintain the level of risk he will borrow proportionate amount and invest that amount also in shares of unlevered company.

2. Investment & Borrowings

Sell shares in Levered company (3,75,000 x 20%)	75,000
Borrow money (1,50,000 x 20%)	<u>30,000</u>
Buy shares in Unlevered company	1,05,000

3. Change in Return

Income from shares in Unlevered company (1,05,000 x 12%)	12,600
Less: interest on loan (30,000 x 10%)	<u>3,000</u>
Net Income from unlevered firm	9,600
Income from Levered firm (75,000 x 12%)	<u>9,000</u>
Incremental Income due to arbitrage	600

(d) (i) Calculation of Average Inventory

Since gross profit is 25% of sales, the cost of goods sold should be 75% of the sales.

$$\text{Cost of goods sold} = 10,00,000 \times \frac{75}{100} = 7,50,000$$

$$\text{Inventory Turnover} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

$$3 = \frac{7,50,000}{\text{Average Inventory}}$$

$$\text{Average Inventory} = \frac{7,50,000}{3} = 2,50,000$$

(ii) Calculation of Average Collection Period

$$\text{Average Collection Period} = \frac{\text{Average Debtors}}{\text{Credit Sales}} \times 360$$

$$\text{Where, Average Debtors} = \frac{\text{Opening Debtors} + \text{Closing Debtors}}{2}$$

Calculation of Closing balance of debtors

	₹	₹
Current Assets (2 x 2,00,000)		4,00,000
Less: Inventories	80,000	
Marketable Securities	50,000	
Cash	30,000	1,60,000
Debtors Closing Balance		2,40,000

$$\text{Now, Average Debtors} = \frac{1,50,000 + 2,40,000}{2} = 1,95,000$$

$$\text{So, Average Collection Period} = \frac{1,95,000}{10,00,000} \times 360 = 70.2 \text{ or } 70 \text{ days}$$

2. (a)

Particulars	Noida	Patparganj
Hours worked	36 hr.	33.75 hr.
Conversion Costs	₹ 6,084	₹ 5,569
Less: Overheads	₹ 900 (₹25 × 36 hr.)	₹ 844 (₹ 25 × 33.75 hr.)
Labour Cost	₹ 5,184	₹ 4,725

(i) **Finding of Normal wage rate:**

Let Wage rate be ₹ R per hour, this is same for both the Noida and Patparganj factory.

Normal wage rate can be found out taking total cost of either factory.

Noida: Rowan Plan

Total Labour Cost = Wages for hours worked + Bonus as per Rowan plan

$$₹ 5,184 = \text{Hours worked} \times \text{Rate per hour} + \left(\frac{\text{Time saved}}{\text{Time allowed}} \times \text{Hours worked} \times \text{Rate per hour} \right)$$

$$\text{Or, } ₹ 5,184 = 36 \text{ hr.} \times R + \left(\frac{45 - 36}{45} \times 36 \times R \right)$$

$$\text{Or, } ₹ 5,184 = 36R + 7.2R$$

$$R = ₹ 120$$

$$\text{Normal wage} = 36 \text{ hrs} \times ₹ 120 = ₹ 4,320$$

OR

Patparganj: Halsey Plan

Total Labour Cost = Wages for hours worked + Bonus as per Halsey plan

$$₹ 4,725 = \text{Hours worked} \times \text{Rate per hour} + (50\% \times \text{Hours saved} \times \text{Rate per hour})$$

$$₹ 4,725 = 33.75 \text{ hr.} \times R + 50\% \times (45 \text{ hr.} - 33.75 \text{ hr.}) \times R$$

$$₹ 4,725 = 39.375 R$$

$$R = ₹ 120$$

$$\text{Normal Wage} = 33.75 \text{ hrs} \times ₹ 120 = ₹ 4,050$$

(ii) **Comparison of conversion costs:**

Particulars	Noida (₹)	Patparganj (₹)
Normal Wages (36 × 120)	4,320	
(33.75 × 120)		4,050
Bonus (7.2 × 120)	864	
(5.625 × 120)		675
Overhead	900	844
	6,084	5,569

(b) (i) **Computation of Earnings per share (EPS)**

Plans	A	B	C
Earnings before interest and tax (EBIT)	10,00,000	10,00,000	10,00,000
Less: Interest charges	---	(20,000) (10% × ₹ 2 lakh)	---
Earnings before tax (EBT)	10,00,000	9,80,000	10,00,000
Less: Tax (@ 30%)	(3,00,000)	(2,94,000)	(3,00,000)
Earnings after tax (EAT)	7,00,000	6,86,000	7,00,000
Less: Preference Dividend	---	---	(20,000) (10% × ₹ 2 lakh)
Earnings available for Equity shareholders (A)	7,00,000	6,86,000	6,80,000
No. of Equity shares (B)	20,000 (₹ 4 lakh ÷ ₹ 20)	10,000 (₹ 2 lakh ÷ ₹ 20)	10,000 (₹ 2 lakh ÷ ₹ 20)
EPS ₹ [(A) ÷ (B)]	35	68.6	68

(ii) **Calculation of Financial Break-even point**

Financial break-even point is the earnings which are equal to the fixed finance charges and preference dividend.

Plan A: Under this, plan there is no interest or preference dividend payment. Hence, the Financial Break-even point will be zero.

Plan B: Under this plan, there is an interest payment of ₹ 20,000 and no preference dividend. Hence, the Financial Break-even point will be ₹ 20,000 (Interest charges).

Plan C: Under this plan, there is no interest payment but an after tax preference dividend of ₹ 20,000 is paid. Hence, the Financial Break- even point will be before tax earnings of ₹ 28,571 (i.e. ₹ 20,000 ÷ 0.7)

(iii) **Computation of indifference point between the plans**

The indifference between two alternative methods of financing is calculated by applying the following formula.

$$\frac{(EBIT - I_1)(1 - T)}{E_1} = \frac{(EBIT - I_2)(1 - T)}{E_2}$$

Where,

EBIT = Earnings before interest and tax.

I_1 = Fixed charges (interest or pref. dividend) under Alternative 1

I_2 = Fixed charges (interest or pref. dividend) under Alternative 2

T = Tax rate

E_1 = No. of equity shares in Alternative 1

E_2 = No. of equity shares in Alternative 2

Now, we can calculate indifference point between different plans of financing

(a) Indifference point where EBIT of Plan A and Plan B is equal.

$$\frac{(EBIT - 0)(1 - 0.3)}{20000} = \frac{(EBIT - 20,000)(1 - 0.3)}{10,000}$$

$$0.7 \text{ EBIT } (10,000) = (0.7 \text{ EBIT} - 14,000) (20,000)$$

$$7,000 \text{ EBIT} = 14,000 \text{ EBIT} - 28 \text{ crores}$$

$$\text{EBIT} = 40,000$$

(b) Indifference point where EBIT of Plan A and Plan C is equal

$$\frac{(EBIT - 0)(1 - 0.3)}{20000} = \frac{(EBIT - 0)(1 - 0.3) - 20,000}{10,000}$$

$$0.7 \text{ EBIT } (10,000) = (0.7 \text{ EBIT} - 20,000) (20,000)$$

$$7000 \text{ EBIT} = 14,000 \text{ EBIT} - 40 \text{ crores}$$

$$\text{EBIT} = 57,142.86$$

(c) Indifference point where EBIT of Plan B and Plan C are equal

$$\frac{(EBIT - 20,000)(1 - 0.3)}{10000} = \frac{(EBIT - 0)(1 - 0.3) - 20,000}{10,000}$$

$$(0.7 \text{ EBIT} - 14,000) (10,000) = (0.7 \text{ EBIT} - 20,000) (10,000)$$

$$7,000 \text{ EBIT} - 14 \text{ crore} = 7,000 \text{ EBIT} - 20 \text{ crore}$$

There is no indifference point between the financial plans B and C.

3. (a) (i) Calculation of Raw Material inputs during the month:

Quantities Entering Process	Litres	Quantities Leaving Process	Litres
Opening WIP	900	Transfer to Finished Goods	4,200
Raw material input (balancing figure)	5,260	Process Losses	1,800
		Closing WIP	160
	6,160		6,160

(ii) Calculation of Normal Loss and Abnormal Loss/Gain

Particulars	Litres
Total process losses for month	1,800
Normal Loss (10% input)	526
Abnormal Loss (balancing figure)	1,274

(iii) Calculation of values of Raw Material, Labour and Overheads added to the process:

	Material	Labour	Overheads
Cost per equivalent unit	₹ 23.00	₹ 7.00	₹ 9.00
Equivalent units (litre) (refer the working note)	4,734	4,892	4,966
Cost of equivalent units	₹ 1,08,882	₹ 34,244	₹ 44,694
Add: Scrap value of normal loss (526 units × ₹ 20)	₹ 10,520	--	--
Total value added	₹ 1,19,402	₹ 34,244	₹ 44,694

Workings:

Statement of Equivalent Units (litre):

Input Details	Units	Output details	Units	Equivalent Production					
				Material		Labour		Overheads	
				Units	(%)	Units	(%)	Units	(%)
Opening WIP	900	Units completed:							
Units introduced	5,260	- Opening WIP	900	--	--	270	30	360	40
		- Fresh inputs	3,300	3,300	100	3,300	100	3,300	100
		Normal loss	526	--	--	--	--	--	--
		Abnormal loss	1,274	1,274	100	1,274	100	1,274	100
		Closing WIP	160	160	100	48	30	32	20
	6,160		6,160	4,734		4,892		4,966	

(iv) Process Account for Month

	Litres	Amount (₹)		Litres	Amount (₹)
To Opening WIP	900	29,970	By Finished goods	4,200	1,63,800
To Raw Materials	5,260	1,19,402	By Normal loss	526	10,520
To Wages	--	34,244	By Abnormal loss	1,274	49,686
To Overheads	--	44,694	By Closing WIP	160	4,304
	6,160	2,28,310		6,160	2,28,310

(b) Working Notes:

$$\text{Depreciation on Machine - I} = \frac{30,00,000}{5} = ₹ 6,00,000$$

$$\text{Depreciation on Machine - II} = \frac{40,00,000}{5} = ₹ 8,00,000$$

Particulars	Machine-I (₹)	Machine - II (₹)
Annual Income (before Tax and Depreciation)	12,50,000	17,50,000
Less: Depreciation	6,00,000	8,00,000
Annual Income (before Tax)	6,50,000	9,50,000
Less: Tax @ 30%	1,95,000	2,85,000
Annual Income (after Tax)	45,5,000	6,65,000
Add: Depreciation	6,00,000	8,00,000
Annual Cash Inflows	10,55,000	14,65,000

Year	PV factor @ 12%	Machine - I			Machine - II		
		Cash flow (₹)	PV (₹)	Cumulative PV (₹)	Cash flow (₹)	PV (₹)	Cumulative PV (₹)
1	0.893	10,55,000	9,42,115	9,42,115	14,65,000	13,08,245	13,08,245
2	0.797	10,55,000	8,40,835	17,82,950	14,65,000	11,67,605	24,75,850
3	0.712	10,55,000	7,51,160	25,34,110	14,65,000	10,43,080	35,18,930
4	0.636	10,55,000	6,70,980	32,05,090	14,65,000	9,31,740	44,50,670
5	0.567	10,55,000	5,98,185	38,03,275	14,65,000	8,30,655	52,81,325

(i) **Discounted Payback Period**

Machine – I

$$\begin{aligned}\text{Discounted Payback Period} &= 3 + \frac{(30,00,000 - 25,34,110)}{6,70,980} \\ &= 3 + 0.69 \\ &= 3.69 \text{ years or 3 years 8.28 months}\end{aligned}$$

Machine – II

$$\begin{aligned}\text{Discounted Payback Period} &= 3 + \frac{(40,00,000 - 35,18,930)}{9,31,740} \\ &= 3 + 0.52 \\ &= 3.52 \text{ years or 3 years 6.24 months}\end{aligned}$$

(ii) **Net Present Value (NPV)**

Machine – I

$$\text{NPV} = 38,03,275 - 30,00,000 = ₹ 8,03,275$$

Machine – II

$$\text{NPV} = 52,81,325 - 40,00,000 = ₹ 12,81,325$$

(iii) **Profitability Index**

Machine – I

$$\text{Profitability Index} = \frac{38,03,275}{30,00,000} = 1.268$$

Machine – II

$$\text{Profitability Index} = \frac{52,81,325}{40,00,000} = 1.320$$

Conclusion:

Method	Machine - I	Machine - II	Preference
Discounted Payback Period	3.69 years	3.52 years	Machine II
Net Present Value	₹ 8,03,275	₹ 12,81,325	Machine II
Profitability Index	1.268	1.320	Machine II

4. (a) **Working Notes:**

(1) **Calculation of Cost of Goods Sold (COGS):**

$$\text{COGS} = \text{DM} + \text{DL} + \text{FOH} + \text{AOH}$$

$$\text{COGS} = \{0.3 \text{ COGS} + 0.15 \text{ COGS} + (0.10 \text{ COGS} + ₹ 3,45,000) + (0.02 \text{ COGS} + ₹ 1,06,500)\}$$

$$\text{Or, COGS} = 0.57 \text{ COGS} + ₹ 4,51,500$$

$$\text{Or COGS} = \frac{₹ 4,51,500}{0.43} = ₹ 10,50,000$$

(2) **Calculation of Cost of Sales (COS):**

$$\text{COS} = \text{COGS} + \text{S\&DOH}$$

$$\text{COS} = \text{COGS} + (0.04 \text{ COS} + ₹ 1,02,000)$$

$$\text{Or COS} = ₹ 10,50,000 + (0.04 \text{ COS} + ₹ 1,02,000)$$

$$\text{Or, COS} = \frac{₹ 11,52,000}{0.96} = ₹ 12,00,000$$

(3) Calculation of Variable Costs:

Direct Material-	(0.30 × ₹ 10,50,000)	₹ 3,15,000
Direct Labour-	(0.15 × ₹ 10,50,000)	₹ 1,57,500
Factory Overhead-	(0.10 × ₹ 10,50,000)	₹ 1,05,000
Administration OH-	(0.02 × ₹ 10,50,000)	₹ 21,000
Selling & Distribution OH	(0.04 × ₹ 12,00,000)	₹ 48,000
		<u>₹ 6,46,500</u>

(4) Calculation of total Fixed Costs:

Factory Overhead	₹ 3,45,000
Administration OH	₹ 1,06,500
Selling & Distribution OH	₹ 1,02,000
	<u>₹ 5,53,500</u>

(5) Calculation of P/V Ratio:

$$\begin{aligned} \text{P/V Ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{\text{Sales} - \text{Variable Costs}}{\text{Sales}} \times 100 \\ &= \frac{(\text{₹ } 185 \times 7,500 \text{ units}) - ₹ 6,46,500}{₹ 185 \times 7,500 \text{ units}} \times 100 \\ &= \frac{₹ 13,87,500 - ₹ 6,46,500}{₹ 13,87,500} \times 100 = 53.41\% \end{aligned}$$

$$(i) \text{ Break-Even Sales} = \frac{\text{Fixed Costs}}{\text{P/V Ratio}} = \frac{₹ 5,53,500}{53.41\%} = ₹ 10,36,323$$

(ii) Profit earned during the last year

$$\begin{aligned} &= (\text{Sales} - \text{Total Variable Costs}) - \text{Total Fixed Costs} \\ &= (\text{₹ } 13,87,500 - ₹ 6,46,500) - ₹ 5,53,500 \\ &= ₹ 1,87,500 \end{aligned}$$

$$\begin{aligned} (iii) \text{ Margin of Safety (\%)} &= \frac{\text{Sales} - \text{Breakeven sales}}{\text{Sales}} \times 100 \\ &= \frac{₹ 13,87,500 - ₹ 10,36,323}{₹ 13,87,500} \times 100 = 25.31\% \end{aligned}$$

(iv) Profit if the sales were 10% less than the actual sales:

$$\begin{aligned} \text{Profit} &= 90\% (\text{₹ } 13,87,500 - ₹ 6,46,500) - ₹ 5,53,500 \\ &= ₹ 1,13,400 \end{aligned}$$

(b) Working Notes:

$$\begin{aligned} (i) \text{ Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit (25\% of Sales)} \\ &= ₹ 30,00,000 - ₹ 7,50,000 \\ &= ₹ 22,50,000 \end{aligned}$$

- (ii) Closing Stock = Cost of Goods Sold / Stock Turnover
 $= ₹ 22,50,000/6 = ₹ 3,75,000$
- (iii) Fixed Assets = Cost of Goods Sold / Fixed Assets Turnover
 $= ₹ 22,50,000/1.5$
 $= ₹ 15,00,000$
- (iv) Current Assets:
 Current Ratio = 1.5 and Liquid Ratio = 1
 Stock = 1.5 – 1 = 0.5
 Current Assets = Amount of Stock × 1.5/0.5
 $= ₹ 3,75,000 × 1.5/0.5 = ₹ 11,25,000$
- (v) Liquid Assets (Debtors and Cash)
 $= \text{Current Assets} - \text{Stock}$
 $= ₹ 11,25,000 - ₹ 3,75,000$
 $= ₹ 7,50,000$
- (vi) Debtors = Sales × Debtors Collection period / 12
 $= ₹ 30,00,000 × 2 / 12$
 $= ₹ 5,00,000$
- (vii) Cash = Liquid Assets – Debtors
 $= ₹ 7,50,000 - ₹ 5,00,000 = ₹ 2,50,000$
- (viii) Net worth = Fixed Assets / 1.2
 $= ₹ 15,00,000/1.2 = ₹ 12,50,000$
- (ix) Reserves and Surplus
 Reserves and Share Capital = 0.6 + 1 = 1.6
 Reserves and Surplus = ₹ 12,50,000 × 0.6/1.6
 $= ₹ 4,68,750$
- (x) Share Capital = Net worth – Reserves and Surplus
 $= ₹ 12,50,000 - ₹ 4,68,750$
 $= ₹ 7,81,250$
- (xi) Current Liabilities = Current Assets/Current Ratio
 $= ₹ 11,25,000/1.5 = ₹ 7,50,000$
- (xii) Long-term Debts
 Capital Gearing Ratio = Long-term Debts / Equity Shareholders' Fund
 Long-term Debts = ₹ 12,50,000 × 0.5 = ₹ 6,25,000

(a) Preparation of Balance Sheet of a Company

Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity Share Capital	7,81,250	Fixed Assets	15,00,000
Reserves and Surplus	4,68,750	Current Assets	
Long-term Debts	6,25,000	Stock	3,75,000
Current Liabilities	7,50,000	Debtors	5,00,000
		Cash	<u>2,50,000</u>
	<u>26,25,000</u>		<u>26,25,000</u>

(b) Statement Showing Working Capital Requirement

Particulars	(₹)	(₹)
Current Assets		
(i) Stocks		3,75,000
(ii) Receivables (Debtors)		5,00,000
(iii) Cash in hand & at bank		2,50,000
A. Current Assets: Total		11,25,000
Current Liabilities		
B. Current Liabilities: Total		7,50,000
Net Working Capital (A – B)		3,75,000
Add: Provision for contingencies		41,667
(1/9 th of Net Working Capital)		
Working capital requirement		4,16,667

5. (a) Cost classification based on variability

- (i) **Fixed Costs** – These are the costs which are incurred for a period, and which, within certain output and turnover limits, tend to be unaffected by fluctuations in the levels of activity (output or turnover). They do not tend to increase or decrease with the changes in output. For example, rent, insurance of factory building etc., remain the same for different levels of production.
- (ii) **Variable Costs** – These costs tend to vary with the volume of activity. Any increase in the activity results in an increase in the variable cost and vice-versa. For example, cost of direct labour, etc.
- (iii) **Semi-variable Costs** – These costs contain both fixed and variable components and are thus partly affected by fluctuations in the level of activity. Examples of semi variable costs are telephone bills, gas and electricity etc.

(b) Single and Multiple Overhead Rates:

Single overhead rate: It is one single overhead absorption rate for the whole factory.

It may be computed as follows:

$$\text{Single overhead rate} = \frac{\text{Overhead costs for the entire factory}}{\text{Total quantity of the base selected}}$$

The base can be total output, total labour hours, total machine hours, etc.

The single overhead rate may be applied in factories which produces only one major product on a continuous basis. It may also be used in factories where the work performed in each department is fairly uniform and standardized.

Multiple overhead rate: It involves computation of separate rates for each production department, service department, cost center and each product for both fixed and variable overheads. It may be computed as follows:

$$\text{Multiple overhead rate} = \frac{\text{Overhead allocated/apportioned to each department/cost centre or product}}{\text{Corresponding base}}$$

Under multiple overheads rate, jobs or products are charged with varying amount of factory overheads depending on the type and number of departments through which they pass. However, the number of overheads rate which a firm may compute would depend upon two opposing factors viz. the degree of accuracy desired and the clerical cost involved.

- (c) **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.

(d) **Virtual Banking and its Advantages**

Virtual banking refers to the provision of banking and related services through the use of information technology without direct recourse to the bank by the customer.

The **advantages** of virtual banking services are as follows:

- Lower cost of handling a transaction.
- The increased speed of response to customer requirements.
- The lower cost of operating branch network along with reduced staff costs leads to cost efficiency.

Virtual banking allows the possibility of improved and a range of services being made available to the customer rapidly, accurately and at his convenience.

6. (a) **SR – Standard labour Rate per Hour**

AR – Actual labour rate per hour

SH – Standard Hours

AH – Actual hours

$$\begin{aligned} \text{(i) Labour rate Variance} &= \text{AH (SR – AR)} \\ - 1,53,846 &= 25,641 (12 - \text{AR}) \\ - 6 &= 12 - \text{AR} \\ \text{AR} &= ₹ 18 \end{aligned}$$

$$(ii) \text{ Labour Efficiency} = \frac{SH}{AH} \times 100 = 105.3$$

$$SH = \frac{AH \times 105.3}{100} = \frac{25,641 \times 105.3}{100}$$

$$SH = 26,999.973$$

$$SH = 27,000 \text{ hours}$$

$$(iii) \text{ Labour Efficiency Variance} = SR (SH - AH) \\ = 12 (27,000 - 25,641) \\ = ₹ 16,308 (F)$$

$$(iv) \text{ Standard Labour Cost per Unit} = \frac{27,000 \times 12}{9,000} = ₹ 36$$

$$(v) \text{ Actual Labour Cost Per Unit} = \frac{25,641 \times 18}{9,000} = ₹ 51.282$$

(b) (i) Financial leverage

$$\begin{aligned} \text{Combined Leverage} &= \text{Operating Leverage} \times \text{Financial Leverage} \\ \text{So, financial leverage} &= \text{Combined Leverage} / \text{Operating Leverage} \\ &= 2.8 / 1.4 = 2 \end{aligned}$$

(ii) P/V Ratio and EPS

$$\begin{aligned} \text{Operating Leverage} &= \frac{\text{Contribution}}{\text{Contribution} - \text{Fixed Cost}} \\ 1.4 &= \frac{\text{Contribution}}{\text{Contribution} - 2,10,000} \end{aligned}$$

$$1.4 \text{ Contribution} - 2,94,000 = \text{Contribution}$$

$$0.4 \text{ Contribution} = 2,94,000$$

$$\text{Contribution} = 7,35,000$$

$$\text{Now, P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{7,35,000}{40,00,000} \times 100 = 18.375\%$$

$$\text{EPS} = \frac{\text{Profit after tax (PAT)}}{\text{No. of equity shares}}$$

$$\begin{aligned} \text{Earning before tax (EBT)} &= \text{Contribution} - \text{Fixed Cost} - \text{Interest} \\ &= 7,35,000 - 2,10,000 - 2,50,000 \\ &= 2,75,000 \end{aligned}$$

$$\begin{aligned} \text{Profit after tax} &= \text{EBT} - \text{Tax @ 30\%} \\ &= 2,75,000 - 82,500 \\ &= 1,92,500 \end{aligned}$$

$$\text{EPS} = \frac{1,92,500}{2,00,000} = 0.9625$$

(iii) Asset Turnover

Total Assets = Equity Share Capital + Debentures = ₹ 20 lakhs + ₹ 25 lakhs = ₹ 45 lakhs

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} = \frac{40,00,000}{45,00,000} = 0.89$$

0.89 < 1.6, means lower than industry turnover.

- (iv) EBT zero means 100% reduction in EBT. Since combined leverage is 2.8, sales have to be dropped by $100/2.8 = 35.71\%$. Hence new sales will be,

$$40,00,000 \times (100\% - 35.71\%) = 25,71,600$$

7. (a) Journal entries are as follows:

			Dr. (₹)	Cr. (₹)
(i)	Stores Ledger Control A/c..... To Cost Ledger Control A/c	Dr.	27,000	27,000
(ii)	Work-in-Process Control A/c..... To Manufacturing Overhead Control A/c	Dr.	6,000	6,000
(iii)	Cost of Sales A/c..... To Selling & Dist. Overhead Control A/c	Dr.	4,000	4,000
(iv)	(1) Wage Control A/c..... To Cost Ledger Control A/c	Dr.	8,000	8,000
	(2) Manufacturing Overhead Control A/c..... To Wages Control A/c	Dr.	8,000	8,000
	OR			
	Manufacturing Overhead Control A/c..... To Cost Ledger Control A/c	Dr.	8,000	8,000
(v)	Stores Ledger Control A/c To Work-in-Process Control A/c	Dr.	9,000	9,000

*Cost Ledger Control A/c is also known as General Ledger Control A/c

(b) Advantages of Raising Funds by Issue of Equity Shares

- (i) It is a permanent source of finance. Since such shares are not redeemable, the company has no liability for cash outflows associated with its redemption.
- (ii) Equity capital increases the company's financial base and thus helps further the borrowing powers of the company.
- (iii) The company is not obliged legally to pay dividends. Hence in times of uncertainties or when the company is not performing well, dividend payments can be reduced or even suspended.
- (iv) The company can make further issue of share capital by making a right issue.

(c) Practical applications of Marginal costing:

- (i) **Pricing Policy:** Since marginal cost per unit is constant from period to period, firm decisions on pricing policy can be taken particularly in short term.

- (ii) **Decision Making:** Marginal costing helps the management in taking a number of business decisions like make or buy, discontinuance of a particular product, replacement of machines, etc.
- (iii) **Ascertaining Realistic Profit:** Under the marginal costing technique, the stock of finished goods and work-in-progress are carried on marginal cost basis and the fixed expenses are written off to profit and loss account as period cost. This shows the true profit of the period.
- (iv) **Determination of production level:** Marginal costing helps in the preparation of break-even analysis which shows the effect of increasing or decreasing production activity on the profitability of the company.
- (d) **Ageing Schedule:** An important means to get an insight into collection pattern of debtors is the preparation of their 'Ageing Schedule'. Receivables are classified according to their age from the date of invoicing e.g. 0 – 30 days, 31 – 60 days, 61 – 90 days, 91 – 120 days and more. The ageing schedule can be compared with earlier month's figures or the corresponding month of the earlier year.

This classification helps the firm in its collection efforts and enables management to have a close control over the quality of individual accounts. The ageing schedule can be compared with other firms also.

- (e) In batch costing the most important problem is the **determination of 'Economic Batch Quantity'**. It involves two types of costs viz, (i) set up cost and (ii) carrying cost. With the increase in the batch size, there is an increase in the carrying cost but the set-up cost per unit of the product is reduced; this situation is reversed when the batch size is reduced. Thus, there is one particular batch size for which both set up and carrying costs are minimum. This size of a batch is known as economic or optimum batch quantity.

Economic batch quantity can be determined with the help of a table, graph or mathematical formula. The mathematical formula usually used for its determination is as follows:

$$EBQ = \sqrt{\frac{2DS}{C}}$$

Where, D = Annual demand for the product

S = Setting up cost per batch

C = Carrying cost per unit of production per annum