

MOCK TEST PAPER- 1
INTERMEDIATE (NEW): GROUP – II
PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE
PAPER 8A: FINANCIAL MANAGEMENT

Suggested Answers/ Hints

1. (a) **Computation of Operating leverage, Financial leverage and Combined leverage of two companies**

| | Company A | Company B |
|---|---|--|
| Output units per annum | 6,00,000 | 1,50,000 |
| | (Rs.) | (Rs.) |
| Selling price / unit | 60 | 500 |
| Sales revenue | 3,60,00,000 (6,00,000 units × Rs.60) | 7,50,00,000 (1,50,000 units × Rs.500) |
| Less: Variable costs | 1,80,00,000 (6,00,000 units × Rs.30) | 4,12,50,000 (1,50,000 units × Rs.275) |
| Contribution (C) | 1,80,00,000 | 3,37,50,000 |
| Less: Fixed costs | 70,00,000 | 1,40,00,000 |
| EBIT (Earnings before Interest and tax) | 1,10,00,000 | 1,97,50,000 |
| Less: Interest @ 15% on debentures | 6,00,000 | 9,75,000 |
| PBT | 1,04,00,000 | 1,87,75,000 |

| | | |
|--|--|---|
| Operating Leverage = $\frac{\text{Contribution}}{\text{EBIT}}$ | 1.64 (Rs.1,80,00,000 ÷ 1,10,00,000) | 1.71 (Rs.3,37,50,000 ÷ Rs. 1,97,50,000) |
| Financial Leverage = $\frac{\text{EBIT}}{\text{PBT}}$ | 1.06 (Rs.1,10,00,000 ÷ Rs.1,04,00,000) | 1.05 (Rs.1,97,50,000 ÷ Rs. 1,87,75,000) |
| Combined Leverage = DOL × DFL | 1.74 (1.64 × 1.06) | 1.80 (1.71 × 1.05) |

(b) Working Notes:

- (1) Computation of cost of debentures (K_d) :**

$$K_d = \frac{\text{Rs.}85(1-0.35) + \frac{(1,000-985)}{5}}{(1,000+985)} = \frac{55.25+3}{992.5} = 0.0586 \text{ or } 5.86\%$$

- (2) Computation of cost of term loans (K_T) :**

$$\begin{aligned} &= r(1-t) \\ &= 0.12(1-0.35) = 0.078 \text{ or } 7.8\% \end{aligned}$$

(3) Computation of cost of preference capital (K_p) :

$$K_p = \frac{\text{Preference Dividend} + (RV - NP) / n}{(RV + NP) / 2}$$
$$= \frac{\text{Rs.}9 + \frac{(110 - 102)}{5}}{\frac{(110 + 102)}{2}} = \frac{9 + 1.6}{106} = 0.1 \text{ or } 10\%$$

(4) Computation of cost of equity (K_e) :

$$= R_f + \beta(R_m - R_f)$$

Or, = Risk free rate + (Beta × Risk premium)

$$= 0.055 + (1.85 \times 0.07) = 0.1845 \text{ or } 18.45\%$$

Calculation of Weighted Average cost of capital Using market value weights

| Source of Capital | Market value of capital structure (Rs. in lakh) | Weights | After tax cost of capital (%) | WACC (%) |
|---|---|---------|-------------------------------|----------|
| Equity share capital (1 crore shares × Rs.60) | 6,000 | 0.71 | 18.45 | 13.09 |
| 9% Preference share capital (5 lakh shares × Rs.102) | 510 | 0.06 | 10.00 | 0.60 |
| 8.5 % Debentures (1.5 lakh × Rs.985) | 1,477.5 | 0.17 | 5.86 | 0.99 |
| 12% Term loans | 500 | 0.06 | 7.80 | 0.47 |
| | 8,487.50 | 1.000 | | 15.15 |

(c)

| Computation of cash inflow per annum | Rs. |
|--|-----------|
| Net operating income per annum | 13,60,000 |
| Less: Tax @ 35% | 4,76,000 |
| Profit after tax | 8,84,000 |
| Add: Depreciation (Rs.72,00,000 / 5 years) | 14,40,000 |
| Cash inflow | 23,24,000 |

The IRR of the investment can be found as follows:

$$NPV = - \text{Rs. } 72,00,000 + \text{Rs. } 23,24,000 (PVA_{F_5, r}) = 0$$

$$\text{or } PVA_{F_5, r} (\text{Cumulative factor}) = \frac{\text{Rs.}72,00,000}{\text{Rs.}23,24,000} = 3.09$$

Computation of Internal Rate of Return (IRR)

| | | |
|-------------------|-----------|-----------|
| Discounting rate | 15% | 19% |
| Cumulative factor | 3.35 | 3.06 |
| Total NPV (Rs.) | 77,85,400 | 71,11,440 |

| | | |
|-------------------------|-----------------------|-----------------------|
| | (Rs.23,24,000 × 3.35) | (Rs.23,24,000 × 3.06) |
| Internal outlay (Rs.) | 72,00,000 | 72,00,000 |
| Surplus (Deficit) (Rs.) | 5,85,400 | (88,560) |

$$\begin{aligned} \text{IRR} &= \text{LR} + \frac{\text{NPV at LR}}{\text{NPV at LR} - \text{NPV at HR}} \times (\text{HR} - \text{LR}) \\ &= 15\% + \frac{5,85,400}{5,85,400 - (-88,560)} \times (19\% - 15\%) \\ &= 15\% + 3.47 = 18.47\% \end{aligned}$$

(d) Value of a company (V) = Value of equity (S) + Value of debt (D)

A&R Ltd. is all equity financed company, its value would equal to value of equity.

$$\text{Market value of equity} = \frac{\text{Net Income (NI)}}{K_e}$$

In the question, market value of equity is Rs.25,000 lakh and cost of equity (K_e) is 18%. The Net Income (NI) is calculated as follows:

$$\frac{\text{Net income (NI) for equity - holders}}{K_e} = \text{Market Value of Equity}$$

$$\frac{\text{Net income (NI) for equity holders}}{0.18} = 25,000 \text{ lakh}$$

$$\text{Net income for equity holders} = 4,500 \text{ lakh}$$

Net Income (NI) is after tax income, the before tax income would be

$$\text{EBT} = \frac{4,500 \text{ lakh}}{(1 - 0.35)} = 6,923.07 \text{ lakh.}$$

Since, A&R Ltd. is an all equity financed and there is no interest expense, so here EBT is equal to EBIT.

After issuing 10% debentures, the A&R Ltd would become a levered company.

(i) **The value of A&R Ltd. after issuing debentures would be calculated as follows:**

$$\begin{aligned} &\text{Value of a levered company (V}_g\text{)} \\ &= \text{Value of an unlevered company (V}_u\text{)} + \text{Tax benefit (TB)} \\ &= \text{Rs.25,000 lakh} + (\text{Rs.5,000 lakh} \times 35\%) \\ &= \text{Rs.25,000} + \text{Rs.1,750} = \text{Rs.26,750} \end{aligned}$$

(ii) **Cost of Equity (K_e)**

$$\begin{aligned} \text{Total Value} &= \text{Rs.26,750 lakh} \\ \text{Less: Value of Debt} &= \text{Rs. 5,000 lakh} \\ \text{Value of Equity} &= \text{Rs. 21,750} \end{aligned}$$

$$K_e = \frac{4,175 \text{ lakh}}{21,750 \text{ lakh}} = 0.1919 = 19.19\%$$

(iii) WACC (on market value weight)

| Components of Costs | Amount (lakh) | Cost of Capital (%) | Weight | WACC (%) |
|---------------------|---------------|---------------------|--------|----------|
| Equity | 21,750 | 19.19 | 0.81 | 15.54 |
| Debt | 5,000 | 8.10 | 0.19 | 1.54 |
| | 26,750 | | | 17.08 |

Workings Note:

1.

(Rs. in lakh)

| | All Equity | Debt and Equity |
|--|------------|-----------------|
| EBIT (as calculated above) | 6,923.07 | 6,923.07 |
| Interest to debt-holders | - | 500.00 |
| EBT | 6,923.07 | 6,423.07 |
| Taxes (35%) | 2,423.07 | 2,248.07 |
| Income available to equity shareholders | 4,500.00 | 4,175.00 |
| Income to debt holders plus income available to shareholders | 4,500.00 | 4,675.00 |

$$\begin{aligned} 2. \quad \text{Cost of Debenture (K}_d) &= \frac{\text{Rs.}500(1-0.35) + \frac{(5,500-5,000)}{5}}{\frac{(5,500+5,000)}{2}} \\ &= \frac{\text{Rs.}325+100}{5,250} = 0.081 \text{ or } 8.1\% \end{aligned}$$

2. As per MM Hypothesis, value of firm/ company is calculated as below:

$$V_f \text{ or } nP_0 = \frac{(n + \Delta n)P_1 - I + E}{(1 + K_e)}$$

Where,

- V_f = Value of firm in the beginning of the period
- n = number of shares in the beginning of the period
- Δn = number of shares issued to raise the funds required
- I = Amount required for investment
- E = total earnings during the period

(i) Value of the ZX Ltd. when dividends are not paid.

$$\begin{aligned} nP_0 &= \frac{(n + \Delta n)P_1 - I + E}{1 + K_e} \\ nP_0 &= \frac{\left(1,00,000 + \frac{20,00,000}{115}\right) \times \text{Rs.}115 - \text{Rs.}95,00,000 + \text{Rs.}75,00,000}{(1 + 0.15)} \\ &= \frac{\text{Rs.}1,35,00,000 - \text{Rs.}95,00,000 + \text{Rs.}75,00,000}{(1 + 0.15)} = \text{Rs.}1,00,00,000 \end{aligned}$$

Working notes:**1. Price of share at the end of the period (P_1)**

$$P_o = \frac{P_1 + D_1}{1 + K_e}$$

$$100 = \frac{P_1 + 0}{1 + 0.15} \quad \text{or,} \quad P_1 = 115$$

2. Calculation of funds required for investment

| | |
|-------------------------------|--------------|
| Earnings | Rs.75,00,000 |
| Dividend distributed | Nil |
| Fund available for investment | Rs.75,00,000 |
| Total Investment | Rs.95,00,000 |
| Balance Funds required | Rs.20,00,000 |

3. Calculation of no. of shares required to be issued for balance fund

$$\text{No. of shares } (\Delta n) = \frac{\text{Funds required}}{\text{Price at end } (P_1)} = \frac{20,00,000}{115} \text{ shares}$$

(ii) Value of the ZX Ltd. when dividends are paid.

$$nP_o = \frac{(n + \Delta n)P_1 - I + E}{1 + K_e}$$

$$nP_o = \frac{\left(1,00,000 + \frac{70,00,000}{65}\right) \times \text{Rs.65} - \text{Rs.95,00,000} + \text{Rs.75,00,000}}{(1 + 0.15)}$$

$$= \frac{\text{Rs.1,35,00,000} - \text{Rs.95,00,000} + \text{Rs.75,00,000}}{(1 + 0.15)} = \text{Rs.1,00,00,000}$$

Working notes:**4. Price of share at the end of the period (P_1)**

$$P_o = \frac{P_1 + D_1}{1 + K_e}$$

$$100 = \frac{P_1 + 50}{1 + 0.15} \quad \text{or,} \quad P_1 = \text{Rs.65}$$

5. Calculation of funds required for investment

| | |
|-------------------------------|--------------|
| Earnings | Rs.75,00,000 |
| Dividend distributed | Rs.50,00,000 |
| Fund available for investment | Rs.25,00,000 |
| Total Investment | Rs.95,00,000 |
| Balance Funds required | Rs.70,00,000 |

6. Calculation of no. of shares required to be issued for balance fund

$$\text{No. of shares } (\Delta n) = \frac{\text{Funds required}}{\text{Price at end } (P_1)} = \frac{70,00,000}{65} = 1,07,693 \text{ shares (approx.)}$$

Note- As per MM-hypothesis of dividend irrelevance, value of firm remains same irrespective of dividend paid. In the solution, there may be variation in value, which is due to rounding off error.

3. (i) Calculation of Net Present Value (NPV):

| | Year-1 | Year-2 | Year-3 | Year-4 | Year-5 |
|--|----------|----------|----------|----------|----------|
| Sales volume (Qty. in lakh) | 10 | 10 | 10 | 10 | 10 |
| Contribution per unit (Rs.) (Selling price – variable cost) | 250 | 250 | 250 | 250 | 250 |
| Total contribution (Rs.in lakh) | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 |
| Less: Fixed overheads (Rs. In lakh) | 300 | 300 | 300 | 300 | 300 |
| PBDT | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 |
| Less: Depreciation (Rs. in lakh) (Working note-1) | 500 | 375 | 281.25 | 210.94 | 158.20 |
| PBT | 1,700 | 1,825 | 1,918.75 | 1,989.06 | 2,041.80 |
| Less: Tax @ 35% | 595 | 638.75 | 671.56 | 696.17 | 714.63 |
| PAT | 1,105 | 1,186.25 | 1,247.19 | 1,292.89 | 1,327.17 |
| Add: Depreciation | 500 | 375 | 281.25 | 210.94 | 158.20 |
| Add: Salvage value of plant & machinery | - | - | - | - | 474.61 |
| Add: Working capital | - | - | - | - | 800 |
| Net Cash inflow | 1,605 | 1,561.25 | 1,528.44 | 1,503.83 | 2,759.98 |
| P.V factor @15% | 0.869 | 0.756 | 0.657 | 0.571 | 0.497 |
| P.V of cash inflows | 1,394.74 | 1,180.31 | 1,004.18 | 858.68 | 1,371.71 |

Net Present Value = P.V of cash inflows – P.V of cash outflows

= Rs. (1,394.74+1,180.31+1,004.18+858.68+1,371.71) – (Rs.2,000 + Rs. 800)

= Rs.3,009.62 lakh

The NPV of the project is positive, hence, the project is viable.

Working note-1:

| | Year-1 | Year-2 | Year-3 | Year-4 | Year-5 |
|-------------------|--------|--------|--------|--------|--------|
| Opening balance | 2,000 | 1,500 | 1,125 | 843.75 | 632.81 |
| Depreciation @25% | 500 | 375 | 281.25 | 210.94 | 158.20 |
| Closing WDV | 1,500 | 1,125 | 843.75 | 632.81 | 474.61 |

(ii) Determination of sensitivity of NPV w.r.t.

a. Decrease in selling price by 10%

| | Year-1 | Year-2 | Year-3 | Year-4 | Year-5 |
|--|----------|----------|----------|----------|----------|
| Sales volume (Qty. in lakh) | 10 | 10 | 10 | 10 | 10 |
| New Selling price | 450 | 450 | 450 | 450 | 450 |
| Variable cost | 250 | 250 | 250 | 250 | 250 |
| Contribution per unit (Rs.) (Selling price – variable cost) | 200 | 200 | 200 | 200 | 200 |
| Total contribution (Rs.in lakh) | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Less: Fixed overheads (Rs. In lakh) | 300 | 300 | 300 | 300 | 300 |
| PBDT | 1,700 | 1,700 | 1,700 | 1,700 | 1,700 |
| Less: Depreciation (Rs. in lakh) (Working note-1) | 500 | 375 | 281.25 | 210.94 | 158.20 |
| PBT | 1,200 | 1,325 | 1,418.75 | 1,489.06 | 1,541.80 |
| Less: Tax @ 35% | 420 | 463.75 | 496.56 | 521.17 | 539.63 |
| PAT | 780 | 861.25 | 922.19 | 967.89 | 1,002.17 |
| Add: Depreciation | 500 | 375 | 281.25 | 210.94 | 158.20 |
| Add: Salvage value of plant & machinery | - | - | - | - | 474.61 |
| Add: Working capital | - | - | - | - | 800 |
| Net Cash inflow | 1,280 | 1,236.25 | 1,203.44 | 1,178.83 | 2,434.98 |
| P.V factor @15% | 0.869 | 0.756 | 0.657 | 0.571 | 0.497 |
| P.V of cash inflows | 1,112.32 | 934.61 | 790.66 | 673.11 | 1,210.18 |

NPV = Rs. (1,112.32+934.61+790.66+673.11+1,210.18) – (Rs. 2,000 + Rs. 800)

= Rs. 4,720.88 – Rs. 2,800 = 1,920.88 lakh

10% reduction in selling price reduces the NPV by 36.18% (3,009.62-1,920.88/3,009.62)

b. Increase in project cost by 10%

| | Year-1 | Year-2 | Year-3 | Year-4 | Year-5 |
|---|----------|----------|----------|----------|----------|
| PBDT | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 |
| Less: Depreciation (Rs. in lakh) (Working note-2) | 550 | 412.5 | 309.37 | 232.03 | 174.03 |
| PBT | 1,650 | 1,787.50 | 1,890.63 | 1,967.97 | 2,025.97 |
| Less: Tax @ 35% | 577.50 | 625.63 | 661.72 | 688.79 | 709.09 |
| PAT | 1072.50 | 1,161.87 | 1,228.91 | 1,279.18 | 1,316.88 |
| Add: Depreciation | 550 | 412.5 | 309.37 | 232.03 | 174.03 |
| Add: Salvage value of plant & machinery | - | - | - | - | 474.61 |
| Add: Working capital | - | - | - | - | 800 |
| Net Cash inflow | 1,622.50 | 1,574.37 | 1,538.28 | 1,511.21 | 2,765.52 |

| | | | | | |
|---------------------|----------|----------|----------|--------|----------|
| P.V factor @15% | 0.869 | 0.756 | 0.657 | 0.571 | 0.497 |
| P.V of cash inflows | 1,409.95 | 1,190.22 | 1,010.65 | 862.90 | 1,374.46 |

NPV = Rs. (1,409.95+1,190.22+1,010.65+862.90+1,374.46) – (Rs. 2,200 + Rs. 800)

= Rs. 5,848.18 – Rs. 3,000 = 2,848.18 lakh

10% increase in project cost reduces the NPV only by 5.36% (3,009.62 - 2,848.18/3,009.62)

Working note-2:

| | Year-1 | Year-2 | Year-3 | Year-4 | Year-5 |
|-------------------|--------|----------|----------|--------|--------|
| Opening balance | 2,200 | 1,650 | 1,237.50 | 928.13 | 696.10 |
| Depreciation @25% | 550 | 412.5 | 309.37 | 232.03 | 174.03 |
| Closing WDV | 1,650 | 1,237.50 | 928.13 | 696.10 | 522.07 |

4. (i) Computation of Average Inventory

Gross Profit = 25% of Rs.6,00,00,000 = Rs.1,50,00,000

Cost of goods sold (COGS) = Sales - Gross Profit
= Rs.6,00,00,000 – Rs.1,50,00,000
= Rs.4,50,00,000

Inventory Turnover Ratio = $\frac{\text{COGS}}{\text{Average Inventory}}$

$$6 = \frac{\text{Rs.4,50,00,000}}{\text{Average inventory}}$$

Average inventory = Rs.75,00,000

(ii) Computation of Purchases

Purchases = COGS + (Closing Stock – Opening Stock)

= Rs.4,50,00,000 + 16,00,000*

Purchases = Rs.4,66,00,000

* Increase in Stock = Closing Stock – Opening Stock = Rs.16,00,000

(iii) Computation of Average Debtors

Let Credit Sales be Rs.100, Cash sales = $\frac{25}{100} \times 100 = \text{Rs.25}$

Total Sales = 100 + 25= Rs.125

Total sales is Rs.125 credit sales is Rs.100

If total sales is Rs.6,00,00,000, then credit sales is = $\frac{\text{Rs. 6,00,00,000} \times 100}{125}$

Credit Sales = Rs.4,80,00,000

Cash Sales = (Rs.6,00,00,000 – Rs.4,80,00,000) = Rs.1,20,00,000

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average debtors}} = 8$$

$$= \frac{\text{Rs.4,80,00,000}}{\text{Average debtors}} = 8$$

$$\text{Average Debtors} = \frac{\text{Rs.4,80,00,000}}{8}$$

$$\text{Average Debtors} = \text{Rs.60,00,000}$$

(iv) Computation of Average Creditors

$$\begin{aligned} \text{Credit Purchases} &= \text{Purchases} - \text{Cash Purchases} \\ &= \text{Rs.4,66,00,000} - \text{Rs.46,00,000} = \text{Rs.4,20,00,000} \end{aligned}$$

$$\text{Creditors Turnover Ratio} = \frac{\text{Credit Purchases}}{\text{Average Creditors}}$$

$$10 = \frac{\text{Rs.4,20,00,000}}{\text{Average Creditors}}$$

$$\text{Average Creditors} = \text{Rs.42,00,000}$$

(v) Computation of Average Payment Period

$$\begin{aligned} \text{Average Payment Period} &= \frac{\text{Average Creditors}}{\text{Average Daily Credit Purchases}} \\ &= \frac{\text{Rs. 42,00,000}}{\left(\frac{\text{Credit Purchases}}{365}\right)} = \frac{\text{Rs. 42,00,000}}{\left(\frac{\text{Rs. 4,20,00,000}}{365}\right)} \\ &= \frac{\text{Rs.42,00,000}}{\text{Rs.4,20,00,000}} \times 365 = 36.5 \text{ days} \end{aligned}$$

Alternatively

$$\begin{aligned} \text{Average Payment Period} &= 365/\text{Creditors Turnover Ratio} \\ &= \frac{365}{10} = 36.5 \text{ days} \end{aligned}$$

(vi) Computation of Average Collection Period

$$\begin{aligned} \text{Average Collection Period} &= \frac{\text{Average Debtors}}{\text{Net Credit Sales}} \times 365 \\ &= \frac{\text{Rs.60,00,000}}{\text{Rs.4,80,00,000}} \times 365 = 45.625 \text{ days} \end{aligned}$$

Alternatively

$$\begin{aligned} \text{Average collection period} &= \frac{365}{\text{Debtors Turnover Ratio}} \\ &= \frac{365}{8} = 45.625 \text{ days} \end{aligned}$$

(vii) Computation of Current Assets

$$\text{Current Ratio} = \frac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}} = 2.4$$

$$2.4 \text{ Current Liabilities} = \text{Current Assets}$$

$$\text{or CL} = \frac{\text{CA}}{2.4}$$

Further, Working capital = Current Assets – Current liabilities

$$\text{So, Rs.56,00,000} = \text{CA} - \frac{\text{CA}}{2.4}$$

$$\text{Rs.56,00,000} = \frac{1.4\text{CA}}{2.4} \text{ Or, } 1.4 \text{ CA} = \text{Rs.1,34,40,000}$$

$$\text{CA} = \text{Rs.96,00,000}$$

(viii) Computation of Current Liabilities

$$\text{Current liabilities} = \frac{\text{Rs.96,00,000}}{2.4} = \text{Rs.40,00,000}$$

5. (a) Statement showing Estimate of Working Capital Needs

| | (Amount in Rs.) | (Amount in Rs.) |
|---|-----------------|--------------------|
| A. Current Assets | | |
| (i) Inventories: | | |
| Raw material (4 weeks) $\left(\frac{2,60,000 \text{ units} \times \text{Rs.200}}{52 \text{ weeks}} \times 4 \text{ weeks} \right)$ | 40,00,000 | |
| WIP Inventory (1 week) $\left(\frac{2,60,000 \text{ units} \times \text{Rs.425}}{52 \text{ weeks}} \times 1 \text{ week} \right) \times 0.8$ | 17,00,000 | |
| Finished goods inventory (2 weeks) $\left(\frac{2,60,000 \text{ units} \times \text{Rs.425}}{52 \text{ weeks}} \times 2 \text{ weeks} \right)$ | 42,50,000 | 99,50,000 |
| (ii) Receivables (Debtors) (4 weeks) $\left(\frac{2,60,000 \text{ units} \times \text{Rs.425}}{52 \text{ weeks}} \times 4 \text{ weeks} \right) \times \frac{4}{5}$ | | 68,00,000 |
| (iii) Cash and bank balance | | 2,50,000 |
| Total Current Assets | | 1,70,00,000 |
| B. Current Liabilities: | | |
| (i) Payables (Creditors) for materials (3 weeks) $\left(\frac{2,60,000 \text{ units} \times \text{Rs.200}}{52 \text{ weeks}} \times 3 \text{ weeks} \right)$ | | 30,00,000 |

| | | |
|---|--|-------------|
| (ii) Outstanding wages (1 week) $\left(\frac{2,60,000 \text{ units} \times \text{Rs.}75}{52 \text{ weeks}} \times 1 \text{ week} \right)$ | | 3,75,000 |
| (iii) Outstanding overheads (2 weeks) $\left(\frac{2,60,000 \text{ units} \times \text{Rs.}150}{52 \text{ weeks}} \times 2 \text{ weeks} \right)$ | | 15,00,000 |
| Total Current Liabilities | | 48,75,000 |
| Net Working Capital Needs (A – B) | | 1,21,25,000 |

(b) Calculation of Operating Cycle Period and number of Operating Cycle in a Year

$$\begin{aligned} \text{Operating Cycle Period} &= R + W + F + D - C \\ &= 52 + 18 + 20 + 75 - 25 = 140 \text{ days} \end{aligned}$$

$$\text{Number of Operating Cycle in a Year} = \frac{360}{\text{Operating Cycle Period}}$$

$$= 360/140 = 2.57 \text{ times}$$

6. (a) This theory states that firms prefer to issue debt when they are positive about future earnings. Equity is issued when they are doubtful and internal finance is insufficient.

The pecking order theory argues that the capital structure decision is affected by manager's choice of a source of capital that gives higher priority to sources that reveal the least amount of information.

Pecking order theory suggests that managers may use various sources for raising of fund in the following order.

1. Managers first choice is to use internal finance
2. In absence of internal finance they can use secured debt, unsecured debt, hybrid debt etc.
3. Managers may issue new equity shares as a last option.

So briefly under this theory rules are

Rule 1: Use internal financing first.

Rule 2: Issue debt next

Rule 3: Issue of new equity shares at last

(b) Over-capitalization and its Causes and Consequences

It is a situation where a firm has more capital than it needs or in other words assets are worth less than its issued share capital, and earnings are insufficient to pay dividend and interest.

Causes of Over Capitalization

Over-capitalisation arises due to following reasons:

- (i) Raising more money through issue of shares or debentures than company can employ profitably.
- (ii) Borrowing huge amount at higher rate than rate at which company can earn.
- (iii) Excessive payment for the acquisition of fictitious assets such as goodwill etc.
- (iv) Improper provision for depreciation, replacement of assets and distribution of dividends at a higher rate.
- (v) Wrong estimation of earnings and capitalization.

Consequences of Over-Capitalisation

Over-capitalisation results in the following consequences:

- (i) Considerable reduction in the rate of dividend and interest payments.
 - (ii) Reduction in the market price of shares.
 - (iii) Resorting to “window dressing”.
 - (iv) Some companies may opt for reorganization. However, sometimes the matter gets worse and the company may go into liquidation.
- (c) **Letter of Credit:** It is an arrangement by which the issuing bank on the instructions of a customer or on its own behalf undertakes to pay or accept or negotiate or authorizes another bank to do so against stipulated documents subject to compliance with specified terms and conditions.

Or

“Financing a business through borrowing is cheaper than using equity”

- (i) Debt capital is cheaper than equity capital from the point of its cost and interest being deductible for income tax purpose, whereas no such deduction is allowed for dividends.
- (ii) Issue of new equity dilutes existing control pattern while borrowing does not result in dilution of control.
- (iii) In a period of rising prices, borrowing is advantageous. The fixed monetary outgo decreases in real terms as the price level increases.

PAPER 8B: ECONOMICS FOR FINANCE

ANSWERS / HINTS

7. (a) (i) Being an intermediate good, electricity sold to a steel plant will not be included in national income calculation. The underlying principle is that only finished goods and services which are directly sold to the consumer for final consumption would be included. The value of the final output, namely steel, includes the value of electricity used up in the production process. Counting electricity sold to a steel plant separately will lead to the error of double counting and exaggerate the value of steel production.
- (ii) Electric power sold to a consumer household would be included in the calculation of GDP since it is a final good consumed by the end user. Electric power sold to a consumer does not require any further processing and does not undergo any further transformation before use. Once a final good has been sold, it passes out of the active economic flow.
- (iii) The value of parts and components procured from the market by a car manufacturer will not be included in national income calculation because these are intermediate goods used in car production. Value is added to the parts and components through the process of production and the same is resold. The value of the final output, namely car, includes the value of the parts and components. Counting parts and components separately will lead to the error of double counting and exaggerate the value of car production.
- (b) Price ceiling is a government intervention in regulated market economies wherein an upper limit is set on the price charged for a product or service and the sellers are bound to abide by such limits. The objective is to influence the outcomes of a market on the grounds of fairness and equity. When prices of certain essential commodities rise excessively, government may resort to controls in the form of price ceilings (also called maximum price) for making a resource or commodity available to all at reasonable prices. For example: maximum prices of food grains and essential items are set by government during times of scarcity. A price ceiling which is set below the prevailing market clearing price will generate excess demand over supply.
- (c) (i) ATMs let people to withdraw cash from the bank as and when needed, reduces cost of conversion of deposits to cash and makes deposits relatively more convenient. People hold less cash and more deposits, thus reducing the currency-deposit ratio; increasing the money multiplier causing the money supply to increase.
- (ii) If banks decide to keep 100% reserves, then the Money multiplier = $1/\text{required reserve ratio} = 1/100\% = 1$. Deposits simply substitute for the currency that is held by banks as reserves and therefore no new money is created by banks.
- (d) Economic efficiency increases due to quantitative and qualitative benefits of extended division of labour, economies of large scale production, betterment of manufacturing capabilities, increased competitiveness and profitability by adoption of cost reducing technology and business practices and decrease in the likelihood of domestic monopolies. Efficient deployment of productive resources - natural, human, industrial and financial resources ensures productivity gains.
8. (a) Aggregate expenditure or Aggregate demand is the sum of all Planned expenditures for the entire economy. When aggregate expenditure exceeds an economy's production capacity at full employment level, the resulting strain on resources creates demand - pull inflation or higher price level. Nominal output will increase, but it merely reflects higher prices, rather than additional real output.
- (b) Market fails in an economy when the free market leads to misallocation of society's scarce resources or in other words, there is either overproduction or underproduction of particular goods and services leading to a less than optimal outcome.

The four main reasons for market failure are: market power, externalities, public goods, and incomplete information.

Excessive market power causes single producer or small number of producers to produce and sell less output than would be produced and charge a higher price.

Externalities hinder the ability of market prices to convey accurate information about how much to produce and how much to buy.

Public goods, due to their special characteristics such as non-excludability and non-rivalry, are not produced at all or produced less than optimal quantities. These have Free rider problem causing over-use, degradation and depletion of common resources resulting in market failure.

Information failure manifests in *asymmetric information causing adverse selection and moral hazard*.

- (c) Operating procedures are the variety of rules, traditions and practices used in the actual implementation of monetary policy. It encompasses, basically, a set of tactics such as choice of the operating target and policy instruments, the nature and frequency of use of policy instruments, market interventions, the width of corridor for market interest rates and the manner of policy signals to effect desired changes in the intermediate targets.
 - (d) Escalated Tariff structure refers to the system wherein the nominal tariff rates on imports of manufactured goods are higher than the nominal tariff rates on intermediate inputs and raw materials, i.e the tariff on a product increases as that product moves through the value-added chain. For example a four percent tariff on iron ore or iron ingots and twelve percent tariff on steel pipes. This type of tariff is discriminatory as it protects manufacturing industries in importing countries and dampens the attempts of developing manufacturing industries of exporting countries. This has special relevance to trade between developed countries and developing countries. Developing countries are thus forced to continue to be suppliers of raw materials without much value addition.
9. (a) Fiscal policy is a chief instrument available for governments to influence income distribution and plays a significant role in reducing inequality and achieving equity and social justice. The distribution of income in the society is influenced by fiscal policy both directly and indirectly. While current disposable incomes of individuals and corporates are dependent on direct taxes, the potential for future earnings is indirectly influenced by the nation's fiscal policy choices.

Government revenues and expenditure have traditionally been regarded as important instruments for carrying out desired redistribution of income. Following are few measures to achieve desired distributional effects.

- A progressive direct tax system ensures that those who have greater ability to pay contribute more towards defraying the expenses of government and that the tax burden is distributed fairly among the population.
- Indirect taxes can be differential: for example, the commodities which are primarily consumed by the richer income group, such as luxuries, are taxed heavily and the commodities the expenditure on which form a larger proportion of the income of the lower income group, such as necessities, are taxed light.
- A carefully planned policy of public expenditure helps in redistributing income from the rich to the poorer sections of the society. This is done through spending programmes targeted on welfare measures for the disadvantaged, such as
 - (i) poverty alleviation programmes
 - (ii) free or subsidized medical care, education, housing, essential commodities etc. to improve the quality of living of poor
 - (iii) infrastructure provision on a selective basis
 - (iv) various social security schemes under which people are entitled to old-age pensions, unemployment relief, sickness allowance etc.

- (v) subsidized production of products of mass consumption
- (vi) public production and/ or grant of subsidies to ensure sufficient supply of essential goods, and
- (vii) strengthening of human capital for enhancing employability etc.

Choice of a progressive tax system with high marginal taxes may act as a strong deterrent to work save and invest. Therefore, the tax structure has to be carefully framed to mitigate possible adverse impacts on production and efficiency. Additionally, the redistributive fiscal policy and the extent of spending on redistribution should be consistent with the macroeconomic policy objectives of the nation.

- (b) The Reserve money determines the level of liquidity and price level in the economy. It is calculated by the following formula-

Reserve Money = Currency in circulation + Bankers' deposits with the RBI + Other deposits with the RBI

$$= 14903.90 + 5780.60 + 317.20 = 21001.7 \text{ Crore}$$

- (c) The principal objective of the WTO is to facilitate the flow of international trade smoothly, freely, fairly and predictably. The WTO does its functions by acting as a forum for trade negotiations among member governments, administering trade agreements, reviewing national trade policies, assisting developing countries in trade policy issues, through technical assistance and training programmes and cooperating with other international organizations.

10. (a) Increase in investment (ΔI) = Rs 700 crore

Increase in national income (ΔY) = Rs.3,500 crore

$$\text{Multiplier (K)} = \frac{\Delta Y}{\Delta I}$$

$$K = 3500 / 700 = 5$$

$$\text{We know, } K = \frac{1}{1 - MPC}$$

$$1 - MPC = \frac{1}{5}$$

$$1 - MPC = 0.2$$

$$MPC = 1 - 0.2$$

$$MPC = 0.8$$

We also know, $MPC + MPS = 1$

$$\text{Or, } MPS = 1 - MPC$$

$$= 1 - 0.8$$

$$= 0.2$$

$$\text{Change in saving } (\Delta S) = \Delta Y \times MPS$$

$$= 3,500 \text{ crore} \times 0.2$$

$$= 700 \text{ crore}$$

- (b) Whenever the central and the state governments' cash balances fall short of the minimum requirement, they are eligible to avail a facility called Ways and Means Advances (WMA)/overdraft (OD) facility. When the Reserve Bank lends to the governments under Ways and Means Advances (WMA)/overdraft (OD), it results in the generation of excess reserves (*i.e.*, excess balances of commercial banks with the Reserve Bank). The excess reserves thus created can potentially lead to an increase in money supply through the money multiplier process.
- (c) Tariff is defined as a financial charge in the form of a tax, imposed at the border on goods going from one customs territory to another. Tariffs are the most visible and universally used trade measures. Tariffs are aimed at altering the relative prices of goods and services imported, so as to contract the domestic demand and thus regulate the volume of their imports. Tariffs leave the world market price of the goods unaffected; while raising their prices in the domestic market. The main goals of tariffs are to raise revenue for the government, and more importantly to protect the domestic import-competing industries.

A tariff levied on an imported product affects both the country exporting a product and the country importing that product.

- (i) Tariff barriers create obstacles to trade, decrease the volume of imports and exports and therefore of international trade. The prospect of market access of the exporting country is worsened when an importing country imposes a tariff.
 - (ii) By making imported goods more expensive, tariffs discourage domestic consumers from consuming imported foreign goods. Domestic consumers suffer a loss in consumer surplus because they must now pay a higher price for the good and also because compared to free trade quantity, they now consume lesser quantity of the good.
 - (iii) Tariffs encourage consumption and production of the domestically produced import substitutes and thus protect domestic industries.
 - (iv) Producers in the importing country experience an increase in well-being as a result of imposition of tariff. The price increase of their product in the domestic market increases producer surplus in the industry. They can also charge higher prices than would be possible in the case of free trade because foreign competition has reduced.
 - (v) The price increase also induces an increase in the output of the existing firms and possibly addition of new firms due to entry into the industry to take advantage of the new high profits and consequently an increase in employment in the industry.
 - (vi) Tariffs create trade distortions by disregarding comparative advantage and prevent countries from enjoying gains from trade arising from comparative advantage. Thus, tariffs discourage efficient production in the rest of the world and encourage inefficient production in the home country.
 - (vii) Tariffs increase government revenues of the importing country by the value of the total tariff it charges.
11. (a) $GDP_{MP} = (\text{Value of output in primary sector} - \text{intermediate consumption of primary sector}) + (\text{value of output in secondary sector} - \text{intermediate consumption of secondary sector}) + (\text{value of output in tertiary sector} - \text{intermediate consumption of tertiary sector})$
- $$GDP_{MP} = (1000-500) + (900-400) + (700-400)$$
- $$= 500 + 500 + 300 = \text{Rs. 1300 crore}$$
- $$GNP_{MP} = GDP_{MP} + NFIA$$
- $$= 1300 - 20 = \text{Rs. 1280 crore}$$
- (b) Common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption

lessens the benefits available for others. This rival nature of common resources is what distinguishes them from pure public goods, which exhibit both non-excludability and non-rivalry in consumption. They are generally available free of charge. Some important natural resources fall into this category.

Since price mechanism does not apply to common resources, producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation.

- (c) Under the Market Stabilisation Scheme (MSS) the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury-bills/dated securities that are utilized for absorbing from the market excess liquidity of a more enduring nature arising from large capital inflows.

OR

An import quota is a direct restriction which specifies that only a certain physical amount of the good will be allowed into the country during a given time period, usually one year. Import quotas are typically set below the free trade level of imports and are usually enforced by issuing licenses. This is referred to as a binding quota.