

**PAPER – 8: FINANCIAL MANAGEMENT AND ECONOMICS FOR FINANCE****PART A: FINANCIAL MANAGEMENT****QUESTIONS****Ratio Analysis**

1. From the following information, find out missing figures and REWRITE the balance sheet of Mukesh Enterprise.

Current Ratio = 2:1

Acid Test ratio = 3:2

Reserves and surplus = 20% of equity share capital

Long term debt = 45% of net worth

Stock turnover velocity = 1.5 months

Receivables turnover velocity = 2 months

You may assume closing Receivables as average Receivables.

Gross profit ratio = 20%

Sales is ₹ 21,00,000 (25% sales are on cash basis and balance on credit basis)

Closing stock is ₹ 40,000 more than opening stock.

Accumulated depreciation is 1/6 of original cost of fixed assets.

Balance sheet of the company is as follows:

| <b>Liabilities</b>   | <b>(₹)</b> | <b>Assets</b>                   | <b>(₹)</b> |
|----------------------|------------|---------------------------------|------------|
| Equity Share Capital | ?          | Fixed Assets (Cost)             | ?          |
| Reserves & Surplus   | ?          | Less: Accumulated. Depreciation | ?          |
| Long Term Loans      | 6,75,000   | Fixed Assets (WDV)              | ?          |
| Bank Overdraft       | 60,000     | Stock                           | ?          |
| Creditors            | ?          | Debtors                         | ?          |
|                      |            | Cash                            | ?          |
| Total                | ?          | Total                           | ?          |

**Cost of Capital**

2. Amrit Corporation has the following book value capital structure:

|                                               |              |
|-----------------------------------------------|--------------|
| Equity Capital (50 lakh shares of ₹ 10 each). | ₹ 5,00,00000 |
|-----------------------------------------------|--------------|

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|                                                 |               |
|-------------------------------------------------|---------------|
| 15% Preference share (50,000 shares ₹ 100 each) | ₹ 50,00,000   |
| Retained earnings                               | ₹ 4,00,00,000 |
| Debentures 14% (2,50,000 debentures ₹ 100 each) | ₹ 2,50,00,000 |
| Term loan 13%                                   | ₹ 4,00,00,000 |

The companies last year earnings per share was ₹ 5, and it maintains a dividend pay-out ratio of 60% and returns on equity is 10%. The market price per share is ₹ 20.8. Preference share redeemable after 10 years is currently selling for ₹ 90 per share. Debentures redeemable after 6 years are currently selling for ₹ 75 per debenture. The income tax rate is 40%.

- CALCULATE the Weighted Average Cost of Capital (WACC) using market value proportions.
- DETERMINE the Marginal Cost of Capital (MACC) if it needs ₹ 5,00,00,000 next year assuming the amount will be raised by 60% equity, 20% debt and 20% retained earnings. Equity issues will fetch a net price of ₹ 14 and cost of debt will be 13% before tax up to ₹ 40,00,000 and beyond ₹ 40,00,000 it will be 15% before tax.

**Capital Structure**

- Current Capital Structure of XYZ Ltd is as follows:

Equity Share Capital of 7 lakh shares of face value ₹ 20 each

Reserves of ₹ 10,00,000

9% bonds of ₹ 3,00,00,000

11% preference capital: 3,00,000 shares of face value ₹ 50 each

Additional Funds required for XYZ Ltd are ₹ 5,00,00,000.

XYZ Ltd is evaluating the following alternatives:

- Proposed alternative I: Raise the funds via 25% equity capital and 75% debt at 10%. PE ratio in such scenario would be 12.
- Proposed alternative II: Raise the funds via 50% equity capital and rest from 12% Preference capital. PE ratio in such scenario would be 11.

Any new equity capital would be issued at a face value of ₹ 20 each. Any new preferential capital would be issued at a face value of ₹ 20 each. Tax rate is 34%

DETERMINE the indifference point under both the alternatives.

**Leverages**

- The selected financial data for A, B and C companies for the current year ended 31<sup>st</sup> March are as follows:

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| Particulars                       | A          | B          | C          |
|-----------------------------------|------------|------------|------------|
| Variable Expenses as a % of sales | 60         | 50         | 40         |
| Interest                          | ₹ 1,00,000 | ₹ 4,00,000 | ₹ 6,00,000 |
| Degree of Operating Leverage      | 4:1        | 3:1        | 2.5:1      |
| Degree of Financial Leverage      | 3:1        | 5:1        | 2.5:1      |
| Income Tax Rate                   | 30%        | 30%        | 30%        |

- (a) PREPARE income statement for A, B and C companies  
 (b) COMMENT on the financial position and structure of these companies

**Investment Decisions**

5. Dharma Ltd, an existing profit-making company, is planning to introduce a new product with a projected life of 8 years. Initial equipment cost will be ₹ 240 lakhs and additional equipment costing ₹ 26 lakhs will be needed at the beginning of third year. At the end of 8 years, the original equipment will have resale value equivalent to the cost of removal, but the additional equipment would be sold for ₹ 2 lakhs. Working Capital of ₹ 25 lakhs will be needed at the beginning of the operations. The 100% capacity of the plant is of 4,00,000 units per annum, but the production and sales volume expected are as under:

| Year | Capacity (%) |
|------|--------------|
| 1    | 20           |
| 2    | 30           |
| 3-5  | 75           |
| 6-8  | 50           |

A sale price of ₹ 100 per unit with a profit volume ratio (contribution/sales) of 60% is likely to be obtained. Fixed operating cash cost are likely to be ₹ 16 lakhs per annum. In addition to this the advertisement expenditure will have to be incurred as under:

| Year                            | 1  | 2  | 3-5 | 6-8 |
|---------------------------------|----|----|-----|-----|
| Expenditure (₹ Lakhs each year) | 30 | 15 | 10  | 4   |

The company is subjected to 50% tax rate and consider 12% to be an appropriate cost of capital. Straight line method of depreciation is followed by the company. ADVISE the management on the desirability of the project.

**Risk analysis in Capital Budgeting**

6. Remi limited is a manufacturer of mobile phones in India. Currently the company is dependent on the foreign supplier for import of the battery. It is considering investment of ₹ 55,00,000 in a new machine for manufacturing battery of mobile phones. The expected

life of machine is 5 years and has no scrap value. It is expected that 3 lakhs units will be produced and sold each year at a selling price of ₹ 20 per unit. The estimated variable costs and annual fixed costs will be ₹ 12 per unit and ₹ 6,00,000 respectively. Consider 14% to be an appropriate cost of capital. Ignore the taxation and depreciation.

CALCULATE the expected net present value of the project.

You are also Required to MEASURE the sensitivity of the projects NPV to a 10% decrease in the project variables sale price per unit and sales volume and 10% increase in Fixed Cost

### Dividend Decisions

7. Rambo Limited Has 1,00,000 equity shares outstanding for the year 2022. The current market price of the shares is ₹ 100 each. Company is planning to pay dividend of ₹ 10 per share. Required rate of return is 15%. Based on Modigliani-Miller approach, calculate the market price of the share of the company when the recommended dividend is 1) declared and 2) not declared.

How many new shares are to be issued by the company at the end of the year on the assumption that net income for the year is ₹ 40 Lac and the investment budget is ₹ 50,00,000 when dividend is declared, or dividend is not declared.

PROOF that the market value of the company at the end of the accounting year will remain same whether dividends are distributed or not distributed.

### Management of Receivables

8. River limited currently uses the credit terms of 1.5/15 net 45 days and average collection period was 30 days. The company presently having sales of ₹ 50,00,000 and 30% customers availing the discount. The chances of default are currently 5%. Variable cost constitutes 65% and total cost constitute 85% of sales. The company is planning liberalization of credit terms to 2/20 net 50 days. It is expected that sales are likely to increase by ₹ 5,00,000, the default chances are 10% and average collection period will decline to 25 days. There won't be any change in the fixed cost and 50% customers are expected to avail the discount. Tax rate is 35%.

EVALUATE this policy in comparison with the current policy and recommend whether the new policy should be implemented. Assume cost of capital to be 10% (post tax) and 360 days in a year.

### Management of Working Capital

9. Kalyan limited has provided you the following information for the year 2021-22:

By working at 60% of its capacity the company was able to generate sales of ₹ 72,00,000. Direct labour cost per unit amounted to ₹ 20 per unit. Direct material cost per unit was 40% of the selling price per unit. Selling price was 3 times the direct labour cost per unit. Profit margin was 25% on the total cost.

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For the year 2022-23, the company makes the following estimates:

Production and sales will increase to 90% of its capacity. Raw material per unit price will remain unchanged. Direct expense per unit will increase by 50%. Direct labour per unit will increase by 10%. Despite the fluctuations in the cost structure, the company wants to maintain the same profit margin on sales.

Raw materials will be in stock for one month whereas finished goods will remain in stock for two months. Production cycle is for 2 months. Credit period allowed by suppliers is 2 months. Sales are made to three zones:

| Zone | Percentage of sale | Mode of Credit            |
|------|--------------------|---------------------------|
| A    | 50%                | Credit period of 2 months |
| B    | 30%                | Credit period of 3 months |
| C    | 20%                | Cash Sales                |

There are no cash purchases and cash balance will be ₹ 1,11,000

The company plans to apply for a working capital financing from bank for the year 2022-23. ESTIMATE Net Working Capital of the Company receivables to be taken on sales and also COMPUTE the maximum permissible bank finance for the company using 3 criteria of Tandon Committee Norms. (Assume stock of finished goods to be a core current asset)

**Miscellaneous**

10. (a) HIGHLIGHT the similarities and differences between Samurai Bond and Bull Dog Bond.
- (b) EXPLAIN the process of Debt Securitisation.

**SUGGESTED ANSWERS**

1.

| Liabilities          | (₹)              | Assets                  | (₹)              |
|----------------------|------------------|-------------------------|------------------|
| Equity Share Capital | 12,50,000        | Fixed Assets (cost)     | 20,58,000        |
| Reserves & Surplus   | 2,50,000         | Less: Acc. Depreciation | (3,43,000)       |
| Long Term Loans      | 6,75,000         | Fixed Assets (WDV)      | 17,15,000        |
| Bank Overdraft       | 60,000           | Stock                   | 2,30,000         |
| Payables             | 4,00,000         | Receivables             | 2,62,500         |
|                      |                  | Cash                    | 4,27,500         |
| <b>Total</b>         | <b>26,35,000</b> | <b>Total</b>            | <b>26,35,000</b> |

**Working Notes:**

|                           |                    |
|---------------------------|--------------------|
| (i) Sales                 | ₹ 21,00,000        |
| Less: Gross Profit (20%)  | ₹ 4,20,000         |
| Cost of Goods Sold (COGS) | <u>₹ 16,80,000</u> |

$$(ii) \text{ Receivables Turnover Velocity} = \frac{\text{Average Receivables}}{\text{Credit Sales}} \times 12$$

$$2 = \frac{\text{Average Receivables}}{\text{₹ 21,00,000} \times 75\%} \times 12$$

$$\text{Average Receivables} = \frac{\text{₹ 21,00,000} \times 75\% \times 2}{12}$$

$$\text{Average Receivables} = \text{₹ 2,62,500}$$

$$\text{Closing Receivables} = \text{₹ 2,62,500}$$

$$(iii) \text{ Stock Turnover Velocity} = \frac{\text{Average Stock}}{\text{COGS}} \times 12$$

$$\text{Or } 1.5 = \frac{\text{Average Stock}}{\text{₹ 16,80,000}} \times 12$$

$$\text{Or } \text{Average Stock} = \frac{\text{₹ 16,80,000} \times 1.5}{12}$$

$$\text{Or } \text{Average Stock} = \text{₹ 2,10,000}$$

$$\frac{\text{Opening Stock} + \text{Closing Stock}}{2} = \text{₹ 2,10,000}$$

$$\text{Opening Stock} + \text{Closing Stock} = \text{₹ 4,20,000} \dots\dots\dots(1)$$

$$\text{Also, Closing Stock} - \text{Opening Stock} = \text{₹ 40,000} \dots\dots\dots(2)$$

Solving (1) and (2), we get **closing stock = ₹ 2,30,000**

$$(iv) \text{ Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\text{Stock} + \text{Receivables} + \text{Cash}}{\text{Bank Overdraft} + \text{Creditors}}$$

$$\text{Or } 2 = \frac{\text{₹ 2,30,000} + \text{₹ 2,62,500} + \text{Cash}}{\text{₹ 60,000} + \text{Creditors}}$$

$$\text{Or } \text{₹ 1,20,000} + 2 \text{ Payables} = \text{₹ 4,92,500} + \text{Cash}$$

$$\text{Or } 2 \text{ Payables} - \text{Cash} = \text{₹ 3,72,500}$$

$$\text{Or } \text{Cash} = 2 \text{ Payables} - \text{₹ 3,72,500} \dots\dots\dots(3)$$

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$$\text{Acid Test Ratio} = \frac{\text{Current Assests - Stock}}{\text{Current Liabilities}} = \frac{\text{Debtor + Cash}}{\text{Current Liabilities}}$$

$$\text{Or } \frac{3}{2} = \frac{\text{₹ 2,62,500 + Cash}}{60,000 + \text{Creditors}}$$

$$\text{Or ₹ 1,80,000 + 3 Payables} = \text{₹ 5,25,000 + 2 Cash}$$

$$\text{Or 3 Payables} - 2 \text{ Cash} = \text{₹ 3,45,000} \dots\dots\dots (4)$$

Substitute (3) in (4)

$$\text{Or 3 Payables} - 2(2 \text{ Payables} - \text{₹ 3,72,500}) = \text{₹ 3,45,000}$$

$$\text{Or 3 Payables} - 4 \text{ Payables} + \text{₹ 7,45,000} = \text{₹ 3,45,000}$$

$$(\text{Payables}) = \text{₹ 3,45,000} - \text{₹ 7,45,000}$$

$$\text{Payables} = \text{₹ 4,00,000}$$

$$\text{So, Cash} = 2 \times \text{₹ 4,00,000} - \text{₹ 3,72,500}$$

$$\text{Cash} = \text{₹ 4,27,500}$$

(v) Long term Debt = 45% of Net Worth

$$\text{Or ₹ 6,75,000} = 45\% \text{ of Net Worth}$$

$$\text{Net Worth} = \text{₹ 15,00,000}$$

(vi) Equity Share Capital (ESC) + Reserves = ₹ 15,00,000

$$\text{Or ESC} + 0.2\text{ESC} = \text{₹ 15,00,000}$$

$$\text{Or 1.2 ESC} = \text{₹ 15,00,000}$$

$$\text{Equity Share Capital (ESC)} = \text{₹ 12,50,000}$$

(vii) Reserves = 0.2 x ₹ 12,50,000

$$\text{Reserves} = \text{₹ 2,50,000}$$

(viii) Total of Liabilities=Total of Assets

$$\text{Or ₹ 12,50,000} + \text{₹ 2,50,000} + \text{₹ 6,75,000} + \text{₹ 60,000} + \text{₹ 4,00,000} + \text{Fixes Assets(FA) (WDV)} + \text{₹ 2,30,000} + \text{₹ 2,62,000} + \text{₹ 4,27,500}$$

$$\text{Or ₹ 26,35,000} = \text{₹ 9,20,000} + \text{FA(WDV)}$$

**FA (WDV) = ₹ 17,15,000**

Now  $FA(\text{Cost}) - \text{Depreciation} = FA(\text{WDV})$

Or  $FA(\text{Cost}) - FA(\text{Cost})/6 = ₹ 17,15,000$

Or  $5 FA(\text{Cost})/6 = ₹ 17,15,000$

Or  $FA(\text{Cost}) = ₹ 17,15,000 \times 6/5$

**So,  $FA(\text{Cost}) = ₹ 20,58,000$**

**Depreciation = ₹ 20,58,000/6 = ₹ 3,43,000**

**2. (a) Calculation of Cost of Equity**

(i)  $D_0 = ₹ 5 \times 60\%$

$D_0 = ₹ 3$

$g = b \times r$

$= (1-0.6) \times 10\% = 4\%$

$D_1 = D_0 \times (1 + g)$

$= 3 \times (1 + 4\%)$

$= 3 \times 1.04 = 3.12$

$Ke = \frac{D_1}{P_0} + g$

$Ke = \frac{3.12}{20.8} + 0.04$

**Ke = 19%**

**(ii) Calculation of Cost of Preference Shares**

$N = 10$  years

$NP = ₹ 90$

$PD = ₹ 15$

$RV = ₹ 100$

$K_p = \frac{PD + (RV - NP) / N}{(RV + NP)} \times 100$

$K_p = \frac{15 + (100 - 90) / 10}{(100 + 90) / 2} \times 100$



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$$K_p = 16/95 \times 100$$

$$K_p = 16.84\%$$

(iii) Calculation of Cost of Debentures

$$N = 6 \text{ years}$$

$$NP = ₹ 75$$

$$\text{Interest} = ₹ 14$$

$$RV = ₹ 100$$

$$T = 40\%$$

$$K_d = \frac{\text{int} (1-t) + (RV - NP) / N}{(RV + NP) / 2} \times 100$$

$$K_d = \frac{14 \times (1-0.4) + (100-75) / 6}{(100+75) / 2} \times 100$$

$$K_d = \frac{8.4 - 4.17}{87.5} \times 100$$

$$K_d = 14.37\%$$

(iv) Cost of Term Loan

$$K_d = \text{Interest rate} (1-t)$$

$$K_d = 13\% (1-40\%)$$

$$K_d = 7.8\%$$

**Calculation of Weighted Average Cost of Capital (WACC) (using market weights)**

| Capital           | Cost of Capital | Market Value     |                      | Market Value Weights | Product (Cost x weights) |
|-------------------|-----------------|------------------|----------------------|----------------------|--------------------------|
| Equity            | 19.00%          | 20.8 x 50,00,000 | ₹10,40,00,000        | 0.6218               | 11.81%                   |
| Preference Shares | 16.84%          | 90 x 50,000      | ₹ 45,00,000          | 0.0269               | 0.45%                    |
| Debentures        | 14.37%          | 75 x 2,50,000    | ₹ 1,87,50,000        | 0.1121               | 1.61%                    |
| Term Loan         | 7.80%           |                  | ₹ 4,00,00,000        | 0.2392               | 1.87%                    |
| Total             |                 |                  | <b>₹16,72,50,000</b> | <b>1</b>             | <b>15.74%</b>            |

$$\text{WACC} = 15.74\%$$

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## (b) Calculation of Marginal Cost of Capital (MACC)

The required capital of ₹ 50,000,000 will be raised as follows:

Equity = 60% of ₹ 50,000,000 = ₹ 30,000,000

Debt = 20% of ₹ 50,000,000 = ₹ 10,000,000

Retained Earnings = 20% of ₹ 50,000,000 = ₹ 10,000,000

$$\begin{aligned}\text{Marginal Cost of Equity} &= \frac{3.12}{1.4} + 0.04 \\ &= 26.28\%\end{aligned}$$

Marginal Cost of Debt

$$\begin{aligned}\text{Cost of Debt (before tax)} &= \frac{13\% \text{ of ₹ } 40,00,000 + 15\% \text{ of ₹ } 60,00,000}{\text{₹ } 1,00,00,000} \\ &= \frac{\text{₹ } 5,20,000 + \text{₹ } 9,00,000}{\text{₹ } 1,00,00,000} = 14.2\%\end{aligned}$$

$$\begin{aligned}\text{Cost of Debt (after tax)} &= 14.2\% (1-t) \\ &= 14.2\% (1-0.4) \\ &= 8.52\%\end{aligned}$$

**Calculation of marginal cost of capital**

| Capital      | Cost of Capital | Value                | Weights  | Product (Cost x weights) |
|--------------|-----------------|----------------------|----------|--------------------------|
| Equity       | 26.28%          | ₹ 3,00,00,000        | 0.6      | 15.77%                   |
| Reserves     | 26.28%          | ₹ 1,00,00,000        | 0.2      | 5.26%                    |
| Debt         | 8.52%           | ₹ 1,00,00,000        | 0.2      | 1.70%                    |
| <b>Total</b> |                 | <b>₹ 5,00,00,000</b> | <b>1</b> | <b>22.73%</b>            |

**Marginal Cost of Capital (MACC) = 22.73%**

3.

| Current Capital Structure     |                |                      |
|-------------------------------|----------------|----------------------|
| Equity Share Capital          | ₹ 20 x 7 lakhs | ₹ 1,40,00,000        |
| Reserves                      |                | ₹ 10,00,000          |
| 9% Bonds                      |                | ₹ 3,00,00,000        |
| 11% Preference Share Capital  | ₹ 50 x 3 lakhs | ₹ 1,50,00,000        |
| <b>Total Capital Employed</b> |                | <b>₹ 6,00,00,000</b> |

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**Proposed Capital Structure**

| Capital                 | Working        | Proposal I                 | Proposal II                |
|-------------------------|----------------|----------------------------|----------------------------|
| Capital to be raised    |                | <b>₹5,00,00,000</b>        | <b>₹5,00,00,000</b>        |
| Equity                  | 50000000 x 25% | ₹ 1,25,00,000              | -                          |
|                         | 50000000 x 50% | -                          | ₹ 2,50,00,000              |
| Debt @ 10%              | 50000000 x 75% | ₹ 3,75,00,000              | -                          |
| Preference Shares @ 12% | 50000000 x 50% | -                          | ₹ 2,50,00,000              |
| <b>Combined Capital</b> |                | <b>Amount (proposal 1)</b> | <b>Amount (proposal 2)</b> |
| Equity                  |                | ₹ 2,65,00,000              | ₹ 3,90,00,000              |
| Reserves                |                | ₹ 10,00,000                | ₹ 10,00,000                |
| 9% Bond                 |                | ₹ 3,00,00,000              | ₹ 3,00,00,000              |
| 10% Debt                |                | ₹ 3,75,00,000              | -                          |
| 11% Preference Shares   |                | ₹ 1,50,00,000              | ₹ 1,50,00,000              |
| 12% Preference Shares   |                | -                          | ₹ 2,50,00,000              |
|                         |                | <b>₹ 11,00,00,000</b>      | <b>₹ 11,00,00,000</b>      |

$$\begin{aligned}
 \text{Interest for Proposal I} &= ₹ 3,00,00,000 \times 9\% + ₹ 3,75,00,000 \times 10\% \\
 &= ₹ 27,00,000 + ₹ 37,50,000 \\
 &= ₹ 64,50,000
 \end{aligned}$$

$$\text{Preference Dividend for Proposal I} = ₹ 1,50,00,000 \times 11\% = ₹ 16,50,000$$

$$\text{Interest for Proposal II} = ₹ 3,00,00,000 \times 9\% = ₹ 27,00,000$$

$$\begin{aligned}
 \text{Preference Dividend for Proposal II} &= ₹ 1,50,00,000 \times 11\% + ₹ 2,50,00,000 \times 12\% \\
 &= ₹ 16,50,000 + ₹ 30,00,000 = ₹ 46,50,000
 \end{aligned}$$

Let the indifference point be ₹ X

**For Proposal I,**

$$\text{EPS} = \frac{(X - ₹ 64,50,000) \times 0.66 - ₹ 16,50,000}{₹ 13,25,000} \quad (1)$$

**For Proposal II,**

$$\text{EPS} = \frac{(X - ₹ 27,00,000) \times 0.66 - ₹ 46,50,000}{₹ 13,25,000} \quad (2)$$

Equating (1) and (2),

$$\text{EPS} = \frac{(X - ₹ 64,50,000) \times 0.66 - ₹ 16,50,000}{₹ 13,25,000} = \frac{(X - ₹ 27,00,000) \times 0.66 - ₹ 46,50,000}{₹ 19,50,000}$$

$$\frac{0.66X - ₹ 42,57,000 - ₹ 16,50,000}{₹ 1,325} = \frac{0.66X - ₹ 17,82,000 - ₹ 46,50,000}{₹ 1,950}$$

$$\frac{0.66X - ₹ 59,07,000}{₹ 53} = \frac{0.66X - ₹ 64,32,000}{₹ 78}$$

$$₹ 51.48X - ₹ 46,07,46,000 = ₹ 37.98X - ₹ 34,08,96,000$$

$$₹ 16.5X = ₹ 11,98,50,000$$

$$\text{Indifference Point} = X = ₹ 72,63,636.36$$

#### 4. Income Statement of companies A, B and C

| Particulars             | A          | B          | C          |
|-------------------------|------------|------------|------------|
| Sales                   | ₹15,00,000 | ₹30,00,000 | ₹41,66,667 |
| Less: Variable Expenses | ₹9,00,000  | ₹15,00,000 | ₹16,66,667 |
| Contribution            | ₹6,00,000  | ₹15,00,000 | ₹25,00,000 |
| Less: Fixed Cost        | ₹4,50,000  | ₹10,00,000 | ₹15,00,000 |
| EBIT                    | ₹1,50,000  | ₹5,00,000  | ₹10,00,000 |
| Less: Interest          | ₹1,00,000  | ₹4,00,000  | ₹6,00,000  |
| PBT                     | ₹50,000    | ₹1,00,000  | ₹4,00,000  |
| Less: Tax @ 30%         | ₹15,000    | ₹30,000    | ₹1,20,000  |
| PAT                     | ₹35,000    | ₹70,000    | ₹2,80,000  |

#### Working Notes:

$$(i) \text{ Degree of Financial Leverage} = \frac{\text{EBIT}}{\text{EBIT} - \text{Interest}}$$

$$\text{DFL} \times (\text{EBIT} - \text{Int}) = \text{EBIT}$$

$$\text{DFL} \times \text{EBIT} - \text{Int} \times \text{DFL} = \text{EBIT}$$

$$\text{DFL} \times \text{EBIT} - \text{EBIT} = \text{Int} \times \text{DFL}$$

$$\text{EBIT}(\text{DFL} - 1) = \text{Int} \times \text{DFL}$$

$$\text{EBIT} = \frac{\text{int} \times \text{DFL}}{\text{DFL} - 1}$$

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For A,

$$EBIT_A = \frac{₹ 1,00,000 \times 3}{3 - 1}$$

$$EBIT_A = ₹150000$$

For B

$$EBIT_B = \frac{₹ 4,00,000 \times 5}{5 - 1}$$

$$EBIT_B = ₹500000$$

For C

$$EBIT_C = \frac{₹ 6,00,000 \times 2.5}{2.5 - 1}$$

$$EBIT_C = ₹10,00,000$$

$$(ii) \quad DOL = \frac{\text{Contribution}}{EBIT}$$

$$\text{Contribution} = DOL \times EBIT$$

$$\text{Contribution}_A = 4 \times ₹1,50,000$$

$$\text{Contribution}_A = ₹6,00,000$$

$$\text{Contribution}_B = 3 \times ₹5,00,000$$

$$\text{Contribution}_B = ₹15,00,000$$

$$\text{Contribution}_C = 2.5 \times ₹10,00,000$$

$$\text{Contribution}_C = ₹25,00,000$$

$$(iii) \quad \text{Fixed Cost} = \text{Contribution} - EBIT$$

$$\text{Fixed Cost}_A = ₹6,00,000 - ₹1,50,000 = ₹4,50,000$$

$$\text{Fixed Cost}_B = ₹15,00,000 - ₹5,00,000 = ₹10,00,000$$

$$\text{Fixed Cost}_C = ₹25,00,000 - ₹10,00,000 = ₹15,00,000$$

$$(iv) \quad \text{Contribution} = \text{Sales} - VC$$

$$VC = \text{Sales} - \text{Contribution}$$

$$\text{Sales} \times VC \text{ Ratio} = \text{Sales} - \text{Contribution}$$

$$\text{Contribution} = \text{Sales} - \text{Sales} \times VC \text{ Ratio}$$

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$$\text{Contribution} = \text{Sales}(1 - \text{VCR})$$

$$\text{Sales} = \frac{\text{Contribution}}{1 - \text{VCR}}$$

$$\text{Sales}_A = ₹6,00,000 / (1 - 0.6) = ₹15,00,000$$

$$\text{Sales}_B = ₹15,00,000 / (1 - 0.5) = ₹30,00,000$$

$$\text{Sales}_C = ₹25,00,000 / (1 - 0.4) = ₹41,66,667$$

Of all the companies, A has the highest degree of Operating Leverage, B has highest degree of Financial Leverage and C is equally leveraged on both Operating and Financial fronts. If we consider combined leverage companies will have the leverages of 12, 15 and 6.25 (by multiplying both operating and financial leverages). This means A is undertaking a higher degree of operating risk while B is undertaking a higher degree of financial risk.

5.

## Calculation of Cash Flow After tax

|   | Year                              | 1             | 2            | 3 to 5        | 6 to 8        |
|---|-----------------------------------|---------------|--------------|---------------|---------------|
| A | Capacity                          | 20%           | 30%          | 75%           | 50%           |
| B | Units                             | 80000         | 120000       | 300000        | 200000        |
| C | Contribution p.u.                 | ₹60           | ₹60          | ₹60           | ₹60           |
| D | Contribution                      | ₹48,00,000    | ₹72,00,000   | ₹1,80,00,000  | ₹1,20,00,000  |
| E | Fixed Cash Cost                   | ₹16,00,000    | ₹16,00,000   | ₹16,00,000    | ₹16,00,000    |
|   | Depreciation                      |               |              |               |               |
| F | Original Equipment (₹240Lakhs/8)  | ₹30,00,000    | ₹30,00,000   | ₹30,00,000    | ₹30,00,000    |
| G | Additional Equipment (₹24Lakhs/6) | --            | --           | ₹4,00,000     | ₹4,00,000     |
| H | Advertisement Expenditure         | ₹30,00,000    | ₹15,00,000   | ₹10,00,000    | ₹4,00,000     |
| I | Profit Before Tax (D-E-F-G-H)     | ₹ (28,00,000) | ₹11,00,000   | ₹1,20,00,000  | ₹66,00,000    |
| J | Tax savings/ (expenditure)        | ₹14,00,000    | ₹ (5,50,000) | ₹ (60,00,000) | ₹ (33,00,000) |
| K | Profit After Tax                  | ₹ (14,00,000) | ₹5,50,000    | ₹60,00,000    | ₹33,00,000    |
| L | Add: Depreciation (F+G)           | ₹30,00,000    | ₹30,00,000   | ₹34,00,000    | ₹34,00,000    |
| M | Cash Flow After Tax               | ₹16,00,000    | ₹35,50,000   | ₹94,00,000    | ₹67,00,000    |

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| Calculation of NPV |                            |                 |           |                   |
|--------------------|----------------------------|-----------------|-----------|-------------------|
| Year               | Particulars                | Cash Flows      | PV factor | PV                |
| 0                  | Initial Investment         | ₹ (2,40,00,000) | 1.000     | ₹ (2,40,00,000)   |
| 0                  | Working Capital Introduced | ₹ (25,00,000)   | 1.000     | ₹ (25,00,000)     |
| 1                  | CFAT                       | ₹ 16,00,000     | 0.893     | ₹ 14,28,800       |
| 2                  | CFAT                       | ₹ 35,50,000     | 0.797     | ₹ 28,29,350       |
| 2                  | Additional Equipment       | ₹ (26,00,000)   | 0.797     | ₹ (20,72,200)     |
| 3                  | CFAT                       | ₹ 94,00,000     | 0.712     | ₹ 66,92,800       |
| 4                  | CFAT                       | ₹ 94,00,000     | 0.636     | ₹ 59,78,400       |
| 5                  | CFAT                       | ₹ 94,00,000     | 0.567     | ₹ 53,29,800       |
| 6                  | CFAT                       | ₹ 67,00,000     | 0.507     | ₹ 33,96,900       |
| 7                  | CFAT                       | ₹ 67,00,000     | 0.452     | ₹ 30,28,400       |
| 8                  | CFAT                       | ₹ 67,00,000     | 0.404     | ₹ 27,06,800       |
| 8                  | WC Released                | ₹ 25,00,000     | 0.404     | ₹ 10,10,000       |
| 8                  | Salvage Value              | ₹ 2,00,000      | 0.404     | ₹ 80,800          |
|                    | Net Present Value          |                 |           | <b>₹39,09,850</b> |

Since the NPV is positive, the proposed project should be implemented.

6. Calculation of NPV and sensitivity for different scenarios

|                          | Original Scenario | Sale Price reduced by 10% | Sales Volume reduced by 10% | Fixed Cost increased by 10% |
|--------------------------|-------------------|---------------------------|-----------------------------|-----------------------------|
| Units                    | 300000            | 300000                    | 270000                      | 300000                      |
| Sale Price p.u.          | ₹20               | ₹18                       | ₹20                         | ₹20                         |
| VC p.u.                  | ₹12               | ₹12                       | ₹12                         | ₹12                         |
| Contribution p.u.        | ₹8                | ₹6                        | ₹8                          | ₹8                          |
| Contribution             | ₹24,00,000        | ₹18,00,000                | ₹21,60,000                  | ₹24,00,000                  |
| Less: Fixed Cost         | ₹6,00,000         | ₹6,00,000                 | ₹6,00,000                   | ₹6,60,000                   |
| Profit/Cash Flows        | ₹18,00,000        | ₹12,00,000                | ₹15,60,000                  | ₹17,40,000                  |
| PVAF (14%, 5 years)      | 3.4331            | 3.4331                    | 3.4331                      | 3.4331                      |
| PV of Cash Inflows       | ₹61,79,546        | ₹41,19,697                | ₹53,55,606                  | ₹59,73,561                  |
| Less: Initial Investment | ₹ (55,00,000)     | ₹ (55,00,000)             | ₹ (55,00,000)               | ₹ (55,00,000)               |
| NPV                      | ₹6,79,546         | ₹ (13,80,303)             | ₹ (1,44,394)                | ₹4,73,561                   |
| % Change in NPV          | NA                | (303.12%)                 | (121.25%)                   | (30.31%)                    |

|                    |    |                  |                  |                 |
|--------------------|----|------------------|------------------|-----------------|
| <b>Sensitivity</b> | NA | 30.3121<br>times | 12.1249<br>times | 3.0312<br>times |
|--------------------|----|------------------|------------------|-----------------|

Sales Price is the most sensitive variable of all and needs to be given due attention during the life of the project.

**7. CASE 1: Value of the firm when dividends are not paid.**

Step 1: Calculate price at the end of the period

$$K_e = 15\%, \quad P_0 = ₹100, \quad D_1 = 0$$

$$P_0 = \frac{P_1 + D_1}{1 + K_e}$$

$$₹100 = \frac{P_1 + 0}{1 + 0.15}$$

$$P_1 = ₹115$$

Step 2: Calculation of funds required for investment

|                               |                                         |
|-------------------------------|-----------------------------------------|
| Earning                       | ₹ 40,00,000                             |
| Dividend distributed          | Nil                                     |
| Fund available for investment | ₹ 40,00,000                             |
| Total Investment              | ₹ 50,00,000                             |
| Balance Funds required        | ₹ 50,00,000 - ₹ 40,00,000 = ₹ 10,00,000 |

Step 3: Calculation of No. of shares required to be issued for balance funds

$$\text{No. of shares} = \text{Funds required} / P_1$$

$$\Delta n = ₹10,00,000 / ₹115$$

Step 4: Calculation of value of firm

$$nP_0 = [(n + \Delta n)P_1 - I + E] / (1 + K_e)$$

$$nP_0 = [(100000 + 1000000 / ₹115) ₹115 - ₹5000000 + ₹4000000] / (1.15)$$

$$= ₹1,00,00,000$$

**CASE 2: Value of the firm when dividends are paid.**

Step 1: Calculate price at the end of the period

$$K_e = 15\%, \quad P_0 = ₹100, \quad D_1 = ₹10$$

$$P_0 = \frac{P_1 + D_1}{1 + K_e}$$



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$$₹100 = \frac{P_1 + 10}{1 + 0.15}$$

$$P_1 = ₹105$$

Step 2: Calculation of funds required for investment

|                               |                                         |
|-------------------------------|-----------------------------------------|
| Earning                       | ₹ 40,00,000                             |
| Dividend distributed          | 10,00,000                               |
| Fund available for investment | ₹ 30,00,000                             |
| Total Investment              | ₹ 50,00,000                             |
| Balance Funds required        | ₹ 50,00,000 - ₹ 30,00,000 = ₹ 20,00,000 |

Step 3: Calculation of No. of shares required to be issued for balance fund

$$\text{No. of shares} = \text{Funds Required}/P_1$$

$$\Delta n = ₹2000000/₹105$$

Step 4: Calculation of value of firm

$$nP_0 = [(n + \Delta n)P_1 - I + E]/(1 + K_e)$$

$$nP_0 = [(100000 + 2000000/₹105) ₹105 - ₹5000000 + ₹4000000]/(1.15) = ₹1,00,00,000$$

Thus, it can be seen from the above calculations that the value of the firm remains the same in either case.

8.

## Evaluation of Credit Policies

| Particulars |                                    | 1.5/15 net 45 | 2/20 net 50 |
|-------------|------------------------------------|---------------|-------------|
| A           | Sales                              | ₹50,00,000    | ₹55,00,000  |
| B           | Variable Cost (65%)                | ₹32,50,000    | ₹35,75,000  |
| C           | Fixed Cost (20% in 1st Case)       | ₹10,00,000    | ₹10,00,000  |
| D           | Bad Debts (5% and 10%)             | ₹2,50,000     | ₹5,50,000   |
| E           | Discounts                          |               |             |
|             | (₹5000000x30%x1.5%)                | ₹22,500       | -           |
|             | (₹5500000x50%x2%)                  | -             | ₹55,000     |
| F           | PBT (A-B-C-D-E)                    | ₹4,77,500     | ₹3,20,000   |
| G           | Tax @ 35%                          | ₹1,67,125     | ₹1,12,000   |
| H           | PAT                                | ₹3,10,375     | ₹2,08,000   |
| I           | Opportunity Cost                   |               |             |
|             | (₹3250000 + ₹1000000) x 30/360x10% | ₹35,417       | -           |

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|---|---------------------------------------------------|------------------|------------------|
|   | $(₹3575000 + ₹1000000) \times 25/360 \times 10\%$ | -                | ₹31,771          |
| J | <b>Net Benefit</b>                                | <b>₹2,74,958</b> | <b>₹1,76,229</b> |

The new policy leads to lower net benefit for the company. Hence it should not be implemented.

9.

## Cost Structure

| Particulars     | Calculations           | 2021-22                       |                          | Calculations | 2022-23                            |                          |
|-----------------|------------------------|-------------------------------|--------------------------|--------------|------------------------------------|--------------------------|
|                 |                        | P.U.                          | Amount<br>(p.u. X units) |              | P.U.                               | Amount<br>(p.u. X units) |
| Direct Material | 40% of SP              | ₹24                           | ₹28,80,000               | Same as PY   | ₹24                                | ₹43,20,000               |
| Direct labour   | Given                  | ₹20                           | ₹24,00,000               | 20*1.1       | ₹22                                | ₹39,60,000               |
| Direct Expenses | bal. fig.              | ₹4                            | ₹4,80,000                | 4*1.5        | ₹6                                 | ₹10,80,000               |
| Total Cost      | SP - Profit            | ₹48                           | ₹57,60,000               |              | ₹52                                | ₹93,60,000               |
| Profit          | (SP/125x25)            | ₹12                           | ₹14,40,000               | 52*25%       | ₹13                                | ₹23,40,000               |
| Sales           | 3 x Direct Labour p.u. | ₹60                           | ₹72,00,000               |              | ₹65                                | ₹1,17,00,000             |
| *units=         |                        | $₹72,00,000 / ₹60 = 1,20,000$ |                          |              | $1,20,000/60 \times 90 = 1,80,000$ |                          |

## Operating Cycle

|                               |            |
|-------------------------------|------------|
| Raw material holding period   | 1 month    |
| Finished Goods holding period | 2 months   |
| WIP conversion period         | 2 months   |
| Creditor Payment Period       | 2 months   |
| Receivables Collection Period | 2/3 months |

## Estimation of Working Capital

| Particulars                  | Calculation             | Amount    |
|------------------------------|-------------------------|-----------|
| <b><u>Current Assets</u></b> |                         |           |
| Stock of Raw Material        | $43,20,000 \times 1/12$ | ₹3,60,000 |
| <b><u>Stock of WIP</u></b>   |                         |           |
| RM cost                      | ₹43,20,000              |           |
| Labour cost                  | ₹19,80,000              |           |
| Direct Exp cost              | ₹5,40,000               |           |

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|                             |                          |                    |
|-----------------------------|--------------------------|--------------------|
| Total WIP Cost              | ₹68,40,000               |                    |
| Stock of WIP                | 68,40,000 x 2/12         | ₹11,40,000         |
| Stock of Finished Goods     | 93,60,000 x 2/12         | ₹15,60,000         |
| Receivables (on sales)      |                          |                    |
| A                           | 1,17,00,000 x 50% x 2/12 | ₹9,75,000          |
| B                           | 1,17,00,000 x 30% x 3/12 | ₹8,77,500          |
| C                           | NIL                      | -                  |
| Cash Balance                | Given                    | ₹1,11,000          |
| <b>Total Current Assets</b> |                          | <b>₹ 50,23,500</b> |
| <b>Current Liabilities</b>  |                          |                    |
| Payables                    | *₹44,40,000 x 2/12       | ₹7,40,000          |
| <b>Net Working Capital</b>  |                          | <b>₹ 42,83,500</b> |

Opening RM stock = 28,80,000 x 1/12 = ₹2,40,000

\* RM purchased = RM consumed – Opening Stock + Closing Stock

= ₹43,20,000 – ₹2,40,000 + ₹3,60,000

= ₹44,40,000

| Computation of Maximum Permissible Bank Finance |                                                     |                                             |            |
|-------------------------------------------------|-----------------------------------------------------|---------------------------------------------|------------|
| Method                                          | Formula                                             | Calculation                                 | ₹          |
| I                                               | 75% x (Current Assets-Current Liabilities)          | 75% x (₹50,23,500 - ₹7,40,000)              | ₹32,12,625 |
| II                                              | 75% x Current Assets-Current Liabilities            | 75% x ₹50,23,500 - ₹7,40,000                | ₹30,27,625 |
| III                                             | 75% x (Current Assets-Core CA)- Current Liabilities | 75% x (₹50,23,500 - ₹15,60,000) - ₹7,40,000 | ₹18,57,625 |

10. (a)

|              |                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Samurai Bond | <ul style="list-style-type: none"> <li>Samurai bonds are denominated in Japanese Yen JPY</li> <li>Issued in Tokyo</li> <li>Issuer Non- Japanese Company</li> <li>Regulations: Japanese</li> <li>Purpose: Access of capital available in Japanese market</li> <li>Issue proceeds can be used to fund Japanese operation</li> <li>Issue proceeds can be used to fund a company's local</li> </ul> |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|              |                                                                                                                                                                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | opportunities.<br>• It can also be used to hedge foreign exchange risk                                                                                                                                                                                                                                                                        |
| Bulldog Bond | • It is denominated in Bulldog Pound Sterling/Great Britain Pound (GBP)<br>• Issued in London<br>• Issuer Non- UK Company<br>• Regulations: Great Britain<br>• Purpose: Access of capital available in UK market<br>• Issue proceeds can be used to fund UK operation<br>• Issue proceeds can be used to fund a company's local opportunities |

- (b) Securitisation is a **process in which illiquid assets are pooled** into marketable securities that can be sold to investors. The process leads to the creation of financial instruments that represent ownership interest in, or are secured by a segregated income producing asset or pool of assets. These assets are generally secured by personal or real property such as automobiles, real estate, or equipment loans but in some cases are unsecured.

#### **Example of Debt Securitisation:**

A finance company has given a large number of car loans. It needs more money so that it is in a position to give more loans. One way to achieve this is to sell all the existing loans. But, in the absence of a liquid secondary market for individual car loans, this is not feasible.

However, a practical option is debt securitisation, in which the finance company sells its existing car loans already given to borrowers to the Special Purpose Vehicle (SPV). The SPV, in return pays to the company, which in turn continue to lend with this money. On the other hand, the SPV pools these loans and convert these into marketable securities. It means that now these converted securities can be issued to investors.

So, this process of debt securitization helps the finance company to raise funds and get the loans off its Balance Sheet. These funds also help the company disburse further loans. Similarly, the process is beneficial to the investors also as it creates a liquid investment in a diversified pool of car loans, which may be an attractive option to other fixed income instruments. The whole process is carried out in such a way that the original Receivables i.e. the car loan borrowers may not be aware of the transaction. They might have continued making payments the way they are already doing. However, these payments shall now be made to the new investors who have emerged out of this securitization process.

**SECTION: B: ECONOMICS FOR FINANCE****QUESTIONS**

1. (a) What is the significance of Intermediate Good?
- (b) What are the allocation instruments by which government can influence resource allocation in the economy?
- (c) Calculate the Depreciation from the following data?
2. (a) Describe the relevance of Circular Flow of Income in the Measurement of National Income.
- (b) What is lemon Problem in Market Failure?
- (c) Calculate National Income by Expenditure Method and Income Method with the help of following data:

| Items                                             | ₹ In Crores |
|---------------------------------------------------|-------------|
| Compensation of employees                         | 1000        |
| Net factor income from Abroad                     | 10          |
| Net indirect taxes                                | 150         |
| Profit                                            | 900         |
| Private final consumption expenditure             | 4,000       |
| Net domestic capital formation                    | 550         |
| Consumption of fixed capital                      | 120         |
| Rent                                              | 600         |
| Interest                                          | 720         |
| Mixed income of self-employed                     | 800         |
| Net export                                        | 40          |
| Govt. final consumption expenditure               | 1000        |
| Operating surplus                                 | 160         |
| Employer's contribution to social security scheme | 400         |

3. (a) How Public Debt is used as an Instrument of Fiscal Policy?
- (b) What is Compensatory Spending?
- (c) What are the Important Feature of Heckscher Ohlin Theory of International Trade?
- (d) What is the Rationale of the Stabilization Function of the Government?

4. (a) Do you think if the developing Countries engage in liberal trade will be at disadvantage?
- (b) Explain the difference between the Classical and Keynesian theory of International Trade?
- (c) What is the motive for Speculative demand for money?
- (d) What is Market Stabilisation Scheme?
5. (a) What are the effect of Tariff on an Imported Product?
- (b) What are the determinant of money supply?
- (c) What is CRR and its impact on Money Supply?
- (d) Elaborate on the Export Related Measure in International Trade?

**OR**

What is Open market Operation?

### ANSWERS

1. (a) Intermediate goods refer to those goods which are used either for resale or for further production in the same year. They do not end up in final consumption and are not capital goods either. The intermediate goods or services may be either transformed or used up by the production process. They have derived demand. Intermediate goods are used up in the same year; if they remain for more than one year, then they are treated as final goods. Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital. Intermediate goods used to produce other goods rather than being sold to final purchasers are not counted as it would involve double counting.
- (b) A variety of allocation instruments are available by which governments can influence resource allocation in the economy. For example,
  - government may directly produce an economic good
  - government may influence private allocation through incentives and disincentives
  - government may influence allocation through its competition policies, merger policies etc. which affect the structure of industry and
  - governments' regulatory activities such as licensing, controls, minimum wages, and directives on location of industry influence resource allocation.
  - government sets legal and administrative frameworks, and

- any mixture of intermediate methods may be adopted by governments

| (c)                                | ₹ in Cr. |
|------------------------------------|----------|
| GDP at Market Price ( $GDP_{MP}$ ) | 850000   |
| Net Factor Income from abroad      | -250     |
| Aggregate amount of Indirect taxes | 560      |
| Subsidies                          | 50       |
| National Income ( $NNP_{FC}$ )     | 750000   |

Solution:

$$\begin{aligned}
 GDP_{MP} &= NNP_{FC} - NFIA + NIT + \text{Depreciation} \\
 850000 &= 750000 - (-250) + (560 - 50) + \text{Depreciation} \\
 850000 &= 750000 + 250 + 510 + \text{Depreciation} \\
 850000 &= 750760 + \text{Depreciation} \\
 \text{Depreciation} &= 850000 - 750760 \\
 &= ₹ 99240 \text{ cr}
 \end{aligned}$$

2. (a) Circular flow of income refers to the continuous circulation of production, income generation and expenditure involving different sectors of the economy.
- In the production phase, firms produce goods and services with the help of factor services.
  - In the income or distribution phase, the flow of factor incomes in the form of rent, wages, interest and profits from firms to the households occurs
  - In the expenditure or disposition phase, the income received by different factors of production is spent on consumption goods and services and investment goods. This expenditure leads to further production of goods and services and sustains the circular flow.
- (b) When dealing with problems of asymmetric information, the most frequently cited and studied example in Economics is the one developed by George Akerlof in relation to the used car market, which distinguishes cars classified as good from those defined as "lemons" (poor quality vehicles). The owner of a car knows much more about its quality than anyone else. While placing it for sale, he may not disclose all that he knows about the mechanical defects of the vehicle. Based on the probability that the car on sale is a 'lemon', the buyers' willingness to pay for any particular car will be based on the 'average quality' of used cars. Not knowing the honesty of the seller means, the price offered for the vehicle is likely to be less than that of a good car, to account for this risk. However, anyone who sells a 'lemon' (an unusually poor car) stands to gain.

**(c) By Expenditure method**

$$\begin{aligned}
 \text{GDP}_{\text{MP}} &= \text{Private final consumption expenditure} + \text{Government final consumption expenditure} + \text{Gross domestic capital formation (Net domestic capital formation} + \text{depreciation)} + \text{Net export} \\
 &= 4000 + 1000 + (550 + 120) + 40 = 5710 \text{ cr} \\
 \text{NNP}_{\text{FC}} \text{ or NI} &= \text{GDP}_{\text{MP}} - \text{depreciation} + \text{NFIA} - \text{NIT} \\
 &= 5710 - 120 + 10 - 150 = 5450 \text{ cr}
 \end{aligned}$$

**By Income method**

$$\begin{aligned}
 \text{NNP}_{\text{FC}} \text{ or NI} &= \text{Compensation of employees} + \text{Operating Surplus} + \text{Mixed income of self-employed} + \text{NFIA} \\
 &= 1000 + 160 + 800 + 10 = 1970 \text{ cr}
 \end{aligned}$$

3. (a) A rational policy of public borrowing and debt repayment is a potent weapon to fight inflation and deflation. In the case of market loans, the government issues treasury bills and government securities of varying denominations and duration which are traded in debt markets. For financing capital projects, long-term capital bonds are floated and for meeting short-term government expenditure, treasury bills are issued.

The small savings represent public borrowings, which are not negotiable and are not bought and sold in the market. In India, various types of schemes are introduced for mobilising small savings e.g., National Savings Certificates, National Development Certificates, etc. Borrowing from the public through the sale of bonds and securities curtails the aggregate demand in the economy. Repayments of debt by governments increase the availability of money in the economy and increase aggregate demand.

- (b) Compensatory spending is said to be resorted to when the government spending is deliberately carried out with the obvious intention to compensate for the deficiency in private investment.
- (c) The Heckscher-Ohlin theory of trade states that comparative advantage in cost of production is explained exclusively by the differences in factor endowments of the nations. In a general sense of the term, 'factor endowment' refers to the overall availability of usable resources including both natural and man-made means of production. Nevertheless, in the exposition of the modern theory, only the two most important factors—labour and capital—are taken into account.

The Heckscher-Ohlin Trade Theorem establishes that a country tends to specialize in the export of a commodity whose production requires intensive use of its



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abundant resources and imports a commodity whose production requires intensive use of its scarce resources.

- (d) Stabilization function is one of the key functions of fiscal policy and aims at eliminating macroeconomic fluctuations arising from suboptimal allocation. The stabilization function is concerned with the performance of the aggregate economy in terms of labour employment and capital utilization, overall output and income, general price levels, economic growth, and balance of international payments.
4. (a) International trade is often not equally beneficial to all nations. Potential unequal market access and disregard for the principles of fair-trading system may even amplify the differences between trading countries, especially if they differ in their wealth. Economic exploitation is a likely outcome when underprivileged countries become vulnerable to the growing political power of corporations operating globally. The domestic entities can be easily outperformed by financially stronger transnational companies.

Risky dependence of underdeveloped countries on foreign nations impairs economic autonomy and endangers their political sovereignty. Such reliance often leads to widespread exploitation and loss of cultural identity. Substantial dependence may also have severe adverse consequences in times of wars and other political disturbances.

- (b) The classical economists maintained that the economy is self-regulating and is always capable of automatically achieving equilibrium at the 'natural level' of real GDP or output, which is the level of real GDP that is obtained when the economy's resources are fully employed. While circumstances arise from time to time that cause the economy to fall below or to exceed the natural level of real GDP, wage and price flexibility will bring the economy back to the natural level of real GDP. If an excess in the labour force (unemployment) or products exist, the wage or price of these will adjust to absorb the excess. According to them, there will be no involuntary unemployment.

Keynes argued that markets would not automatically lead to full-employment equilibrium and the resulting natural level of real GDP. The economy could settle in equilibrium at any level of unemployment. Keynesians believe that prices and wages are not so flexible; they are sticky, especially downward. The stickiness of prices and wages in the downward direction prevents the economy's resources from being fully employed and thereby prevents the economy from returning to the natural level of real GDP. Therefore, output will remain at less than the full employment level as long as there is insufficient spending in the economy. This was precisely what was happening during the great depression.

- (c) The speculative motive reflects people's desire to hold cash in order to be equipped to exploit any attractive investment opportunity requiring cash expenditure. According to Keynes, people demand to hold money balances to take advantage of

the future changes in the rate of interest, which is the same as future changes in bond prices. It is implicit in Keynes theory, that the 'rate of interest',  $i$ , is really the return on bonds. Keynes assumed that the expected return on money is zero, while the expected returns on bonds are of two types, namely:

- (i) the interest payment
- (ii) the expected rate of capital gain.

(d) This instrument for monetary management was introduced in 2004 following a MoU between the Reserve Bank of India (RBI) and the Government of India (GoI) with the primary aim of aiding the sterilization operations of the RBI. (Sterilization is the process by which the monetary authority sterilizes the effects of significant foreign capital inflows on domestic liquidity by off-loading parts of the stock of government securities held by it). Surplus liquidity of a more enduring nature arising from large capital inflows is absorbed through sale of short-dated government securities and treasury bills. Under this scheme, the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury-bills/dated securities for absorbing excess liquidity from the market arising from large capital inflows.

5. (a) Tariffs encourage consumption and production of the domestically produced import substitutes and thus protect domestic industries. 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.

Tariffs encourage consumption and production of the domestically produced import substitutes and thus protect domestic industries.

(b) There are two alternate theories in respect of determination of money supply. According to the first view, money supply is determined exogenously by the central bank. The second view holds that the money supply is determined endogenously by changes in the economic activities which affect people's desire to hold currency relative to deposits, rate of interest, etc. The current practice is to explain the determinants of money supply based on 'money multiplier approach' which focuses on the relation between the money stock and money supply in terms of the monetary base or high-powered money. The monetary base is the sum of currency in circulation and bank reserves. This approach holds that total supply of nominal money in the economy is determined by the joint behavior of the central bank, the commercial banks and the public.

(c) Cash Reserve Ratio (CRR) refers to the fraction of the total net demand and time liabilities (NDTL) of a scheduled commercial bank in India which it should maintain as cash deposit with the Reserve Bank. Higher the CRR, lower the credit creation

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capacity of banks. Reduce CRR during deflation- - banks to expand credit and increase the supply of money available in the economy- increase the CRR to contain credit expansion during – inflation.

(d) The Export Related measure in international trade is as under :

**Ban on exports:** Export-related measures refer to all measures applied by the government of the exporting country including both technical and non- technical measures. For example, during periods of shortages, export of agricultural products such as onion, wheat etc. may be prohibited to make them available for domestic consumption.

**Export Taxes:** The effect of an export tax is to raise the price of the good and to decrease exports. Since an export tax reduces exports and increases domestic supply, it also reduces domestic prices and leads to higher domestic consumption.

**Export Subsidies and Incentives:** Tariffs on imports hurt exports and therefore countries have developed compensatory measures of different types for exporters like export subsidies, duty drawback, duty-free access to imported intermediates etc.

**Voluntary Export Restraints:** Voluntary Export Restraints (VERs) refer to a type of informal quota administered by an exporting country voluntarily restraining the quantity of goods that can be exported out of that country during a specified period of time.

**OR**

Open Market Operations (OMO) is a general term used for market operations conducted by the Reserve Bank of India by way of sale/ purchase of Government securities to/ from the market with an objective to adjust the rupee liquidity conditions in the market on a durable basis.