Test Series: September 2023

**MOCK TEST PAPER – 1**

**INTERMEDIATE : GROUP – II**

**PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE**

**8A: FINANCIAL MANAGEMENT**

**SUGGESTED ANSWERS/ HINTS**

**1. (a) Statement showing the EPS under the four plans**

| | Plan A | Plan B | Plan C | Plan D |
|---|---|---|---|---|
| Equity share capital | ₹ 8,00,000 | ₹ 6,00,000 | ₹ 5,00,000 | ₹ 6,00,000 |
| 8% Pref. Share capital | - | - | - | ₹ 2,00,000 |
| Borrowing @ 10% | - | ₹ 2,00,000 | ₹ 3,00,000 | - |
| | ₹ 8,00,000 | ₹ 8,00,000 | ₹ 8,00,000 | ₹ 8,00,000 |
| E.B.I.T | ₹ 1,50,000 | ₹ 1,50,000 | ₹ 1,50,000 | ₹ 1,50,000 |
| Less: Interest @ 10% | | ₹ 20,000 | ₹ 30,000 | |
| E.B.T | ₹ 1,50,000 | ₹ 1,30,000 | ₹1,20,000 | ₹ 1,50,000 |
| Less: Tax | ₹ 75,000 | ₹65,000 | ₹60,000 | ₹ 75,000 |
| Less: Pref Divided | | | | ₹ 16,000 |
| Earnings available to equity share holders | ₹ 75,000 | ₹ 65,000 | ₹ 60,000 | ₹ 59,000 |
| No.of equity shares (₹100) | 8,000 | 6,000 | 5,000 | 6,000 |
| Earning per share | **₹ 9.38** | **₹ 10.83** | **₹ 12.00** | **₹ 9.83** |

Plan C given the highest EPS and therefore to be accepted.

**(b) Working notes:**

**(i) Computation of Current Assets and Current Liabilities**

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

Current assets = 2.5 Current liabilities

Now, Working capital = Current assets – Current liabilities

₹ 5,40,000 = 2.5 Current liability – Current liability

Or 1.5 Current liability = ₹ 5,40,000

∴ Current Liabilities = ₹ 3,60,000

So, Current Assets = ₹ 3,60,000 × 2.5 = ₹ 9,00,000

**(ii) Computation of Inventories**

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

$$1.5 = \frac{\text{Current assets - Inventories}}{₹\ 3,60,000}$$

1.5 ₹ 3, 60,000 = ₹ 9,00,000 – Inventories

Inventories =₹ 9,00,000 – ₹ 5,40,000 = ₹ 3,60,000

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

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

∴ Fixed Assets = 0.75 Proprietary fund

Proprietary fund = Fixed Assets + Net Working Capital - Long Term Debt

= 0.75 Proprietary fund + ₹ 5,40,000 - 0

∴ Proprietary fund = ₹ 21,60,000

And Fixed Assets = 0.75 proprietary fund

= 0.75 × ₹ 21,60,000 = ₹ 16,20,000

Capital = Proprietary fund – Reserves & Surplus

= ₹ 21,60,000 – ₹ 4,80,000 = ₹ 16,80,000

Sundry Creditors = Current liabilities – Bank overdraft

= ₹ 3,60,000 – ₹ 1,00,000 = ₹ 2,60,000

**Balance Sheet as of 31st March 2022**

| **Liabilities** | **₹** | **Assets** | **₹** |
|---|---|---|---|
| Capital | 16,80,000 | Fixed Assets | 16,20,000 |
| Reserves & Surplus | 4,80,000 | Inventories | 3,60,000 |
| Bank overdraft | 1,00,000 | Other Current Assets | 5,40,000 |
| Sundry creditors | 2,60,000 | (Balancing figure) | |
| | **25,20,000** | | **25,20,000** |

**(c) Calculation of Net Present Value of the Project**

| Year | Cash Inflows After Tax (in ₹) | C.E. | Adjusted Cash Inflows (in ₹) | Present Value Factor | Present Value (in ₹) |
|---|---|---|---|---|---|
| 1 | 1,50,000 | 0.90 | 1,35,000 | 0.935 | 1,26,225 |
| 2 | 2,25,000 | 0.80 | 1,80,000 | 0.873 | 1,57,140 |
| 3 | 1,75,000 | 0.58 | 1,01,500 | 0.816 | 82,824 |
| 4 | 1,50,000 | 0.56 | 84,000 | 0.763 | 64,092 |
| 5 | 70,000 | 0.50 | 35,000 | 0.713 | 24,955 |
| Total Present Value of Cash Inflows | | | | | **4,55,236** |
| Less: Initial Investment or Cash Outflow required for "Ambar" | | | | | (4,50,000) |
| Net Present Value | | | | | **5,236** |

**Conclusion:** As the Net Present Value of the project after considering the Certainty Equivalent factors is still positive, it may be advised to invest in project "Ambar".

**(d) (i) Cost of Equity Capital ($K_e$):**

$$K_e = \frac{\text{Expected dividend per share}\,(D_1)}{\text{Market price per share}\,(P_0)} + \text{Growth rate}\,(g)$$

$$= \frac{₹\ 3\times1.07}{₹\ 30} + 0.07 = 0.177 \text{ or } 17.7\%$$

**(ii) Cost of Debenture ($K_d$):**

Using Present Value method (YTM)

**Identification of relevant cash flows**

| Year | Cash flows |
|---|---|
| 0 | Current market price ($P_0$) = ₹ 95 |
| 1 to 10 | Interest net of tax [I(1-t)] = 10% of ₹ 100 (1 – 0.5) = ₹ 5 |
| 10 | Redemption value (RV) = ₹ 100 (1.10) = ₹ 110 |

Calculation of Net Present Values (NPV) at two discount rates

| Year | Cash flows (₹) | Discount factor @ 5% (L) | Present Value (₹) | Discount factor @ 10% (H) | Present Value (₹) |
|---|---|---|---|---|---|
| 0 | (95) | 1.000 | (95.00) | 1.000 | (95.00) |
| 1 to 10 | 5 | 7.722 | 38.61 | 6.145 | 30.725 |
| 10 | 110 | 0.614 | 67.54 | 0.386 | 42.46 |
| NPV | | | +11.15 | | -21.815 |

**Calculation of IRR**

$$IRR = L + \frac{NPV_L}{NPV_L - NPV_H}(H-L)$$

$$= 5\% + \frac{₹\,11.15}{₹\,11.15-(₹\,-21.815)}(10\%-5\%) = 5\% + \frac{₹\,55.75}{₹\,32.965} = 6.69\%$$

Therefore, $K_d$ = 6.69%

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

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

Where,

$V_f$ = Value of firm in the beginning of the period

n = number of shares in the beginning of the period

$\Delta n$ = 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.**

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

$$nP_0 = \frac{\left(2,00,000 + \frac{40,00,000}{115}\right) \times ₹115 - Rs.1,90,00,000 + ₹1,50,00,000}{(1+0.15)}$$

$$= \frac{₹2,70,00,000 - ₹1,90,00,000 + ₹1,50,00,000}{(1+0.15)} = ₹\ 2,00,00,000$$

**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 | ₹1,50,00,000 |
| Dividend distributed | Nil |
| Fund available for investment | ₹ 1,50,00,000 |
| Total Investment | ₹ 1,90,00,000 |
| Balance Funds required | ₹ 40,00,000 |

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

$$\text{No. of shares } (\Delta n) = \frac{\text{Funds required}}{\text{Price at end } (P_1)} = \frac{40,00,000}{115} \text{ shares}$$

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

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

$$nP_0 = \frac{\left(2,00,000 + \frac{1,40,00,000}{65}\right) \times ₹65 - ₹1,90,00,000 + ₹1,50,00,000}{(1+0.15)}$$

$$= \frac{₹2,70,00,000 - ₹1,90,00,000 + ₹1,50,00,000}{(1+0.15)} = ₹\ 2,00,00,000$$

**Working notes:**

4. Price of share at the end of the period ($P_1$)

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

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

5. Calculation of funds required for investment

| | |
|---|---|
| Earnings | ₹ 1,50,00,000 |
| Dividend distributed | ₹ 1,00,00,000 |
| Fund available for investment | ₹ 50,00,000 |
| Total Investment | ₹ 1,90,00,000 |
| Balance Funds required | ₹ 1,40,00,000 |

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

$$\text{No. of shares } (\Delta n) = \frac{\text{Funds required}}{\text{Price at end } (P_1)} = \frac{1,40,00,000}{65} = 2,15,385 \text{ shares(approx.)}$$

***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. Company A**

(i) Financial Leverage $= \frac{\text{EBIT}}{\text{EBT i.e EBIT} - \text{Interest}}$

So, 4 $= \frac{\text{EBIT}}{\text{EBIT} - ₹\ 30,000}$

Or, 4 (EBIT – 30,000) = EBIT

Or, 3 EBIT = 1,20,000

Or, EBIT = 40,000

(ii) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}}$ Or, $6 = \frac{\text{Contribution}}{₹\ 40,000}$

Or Contribution = ₹ 2, 40,000

$\text{Sales} = \frac{\text{Contribution}}{\text{P/V Ratio (1 - variable cost ratio)}} = \frac{₹\ 2,40,000}{40\%} = ₹\ 6,00,000$

(iii) Fixed Cost = Contribution – EBIT

= ₹ 2, 40,000 – 40,000

Or Fixed cost = ₹ 2,00,000

**Company B**

(i) Financial Leverage $= \frac{\text{EBIT}}{\text{EBT i.e EBIT} - \text{Interest}}$

So, 3 $= \frac{\text{EBIT}}{\text{EBIT} - 1,20,000}$

Or, 3 (EBIT – ₹1,20,000) = EBIT

Or, 3 EBIT - ₹3,60,000 = EBIT

Or, 2 EBIT = ₹ 3,60,000

Or, EBIT = ₹ 1,80,000

(ii) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}}$

Or, 3 $= \frac{\text{Contribution}}{₹1,80,000}$

Or, Contribution = ₹ 5,40,000

Sales = $\frac{\text{Contribution}}{\text{P/V Ratio (1 - variable cost ratio)}}$ $= \frac{₹\ 5,40,000}{50\%}$ = ₹ 10,80,000

(iii) Fixed Cost = Contribution – EBIT

= ₹ 5,40,000 – ₹ 1,80,000

Or, Fixed cost = ₹ 3,60,000

**Income Statements of Company A and Company B**

| | Company A (₹) | Company B (₹) |
|---|---|---|
| Sales | 6,00,000 | 10,80,000 |
| Less: Variable cost | 3,60,000 | 5,40,000 |
| Contribution | 2,40,000 | 5,40,000 |
| Less: Fixed Cost | 2,00,000 | 3,60,000 |
| Earnings before interest and tax (EBIT) | 40,000 | 1,80,000 |
| Less: Interest | 30,000 | 1,20,000 |
| Earnings before tax (EBT) | 10,000 | 60,000 |
| Less: Tax @ 30% | 3,000 | 18,000 |
| Earnings after tax (EAT) | 7,000 | 42,000 |

**Comment based on Leverage**

Comment based on leverage – Company B is better than company A of the following reasons:

- Capacity of Company B to meet interest liability is better than that of companies A (from EBIT/Interest ratio)

[A = $\frac{₹40,000}{₹30,000}$ = 1.33, B = $\frac{₹1,80,000}{₹1,20,000}$ = 1.50]

Company B has the least financial risk as the total risk (business and financial) of company B is lower (combined leverage of Company A – 24 and Company B- 9)

**4. (i) Computation of EPS under three-financial plans.**

Plan I: Equity Financing

| | (₹) | (₹) | (₹) | (₹) | (₹) |
|---|---|---|---|---|---|
| EBIT | 75,000 | 1,50,000 | 3,00,000 | 4,50,000 | 7,50,000 |
| Interest | 0 | 0 | 0 | 0 | 0 |
| EBT | 75,000 | 1,50,000 | 3,00,000 | 4,50,000 | 7,50,000 |
| *Less*: Tax @ 40% | 30,000 | 60,000 | 1,20,000 | 1,80,000 | 3,00,000 |
| PAT | 45,000 | 90,000 | 1,80,000 | 2,70,000 | 4,50,000 |

| | | | | | |
|---|---|---|---|---|---|
| No. of equity shares | 4,25,000 | 4,25,000 | 4,25,000 | 4,25,000 | 4,25,000 |
| EPS | 0.11 | 0.21 | 0.42 | 0.64 | 1.06 |

Plan II: Debt – Equity Mix

| | (₹) | (₹) | (₹) | (₹) | (₹) |
|---|---|---|---|---|---|
| EBIT | 75,000 | 1,50,000 | 3,00,000 | 4,50,000 | 7,50,000 |
| *Less*: Interest | 1,70,000 | 1,70,000 | 1,70,000 | 1,70,000 | 1,70,000 |
| EBT | (95,000) | (20,000) | 1,30,000 | 2,80,000 | 5,80,000 |
| *Less*: Tax @ 40% | 38,000* | 8000* | 52,000 | 1,12,000 | 2,32,000 |
| PAT | (57,000) | (12,000) | 78,000 | 1,68,000 | 3,48,000 |
| No. of equity shares | 2,12,500 | 2,12,500 | 2,12,500 | 2,12,500 | 2,12,500 |
| EPS | (₹ 0.27) | (0.056) | 0.37 | 0.79 | 1.64 |

* The Company can set off losses against the overall business profit or may carry forward it to next financial years.

Plan III: Preference Shares – Equity Mix

| | (₹) | (₹) | (₹) | (₹) | (₹) |
|---|---|---|---|---|---|
| EBIT | 75,000 | 1,50,000 | 3,00,000 | 4,50,000 | 7,50,000 |
| *Less:* Interest | 0 | 0 | 0 | 0 | 0 |
| EBT | 75,000 | 1,50,000 | 3,00,000 | 4,50,000 | 7,50,000 |
| *Less:* Tax @ 40% | 30,000 | 60,000 | 1,20,000 | 1,80,000 | 3,00,000 |
| PAT | 45,000 | 90,000 | 1,80,000 | 2,70,000 | 4,50,000 |
| *Less:* Pref. dividend | 1,70,000* | 1,70,000* | 1,70,000 | 1,70,000 | 1,70,000 |
| PAT after Pref. dividend. | (1,25,000) | (80,000) | 10,000 | 1,00,000 | 2,80,000 |
| No. of Equity shares | 2,12,500 | 2,12,500 | 2,12,500 | 2,12,500 | 2,12,500 |
| EPS | (0.59) | (0.38) | 0.05 | 0.47 | 1.32 |

* In case of cumulative preference shares, the company must pay cumulative dividend to preference shareholders, when company earns sufficient profits.

**(ii)** From the above EPS computations tables under the three financial plans we can see that when EBIT is ₹ 4,50,000 or more, Plan II: Debt-Equity mix is preferable over the Plan I and Plan III, as rate of EPS is more under this plan. On the other hand, an EBIT of less than ₹4,50,000, Plan I: Equity Financing has higher EPS than Plan II and Plan III. Plan III Preference Share-Equity mix is not acceptable at any level of EBIT, as EPS under this plan is lower.

The choice of the financing plan will depend on the performance of the company and other macro-economic conditions. If the company is expected to have higher operating profit Plan II: Debt – Equity Mix is preferable. Moreover, debt financing gives more benefit due to availability of tax shield.

**(iii) EBIT – EPS Indifference point: Plan I and Plan II**

$$\frac{EBIT_1 \times (1-t)}{No.\,of\ equity\ shares\,(N_1)} = \frac{(EBIT_2 - Interest) \times (1-t)}{No.\,of\ equity\ shares\,(N_2)}$$

$$\frac{EBIT(1-0.40)}{4,25,000\ shares} = \frac{(EBIT - ₹1,70,000)\times(1-0.40)}{2,12,500\ shares}$$

$$0.6\ EBIT = 1.2\ EBIT - ₹2,04,000$$

$$EBIT = \frac{₹2,04,000}{0.6} = ₹\ 3,40,000$$

Indifference points between Plan I and Plan II is ₹ 3,40,000

**EBIT – EPS Indifference Point: Plan I and Plan III**

$$\frac{EBIT_1\times(1-t)}{No.of\ equity\ shares\ (N_1)} = \frac{EBIT_3\times(1-t)-Pref.dividend}{No.of\ equity\ shares\ (N_3)}$$

$$\frac{EBIT_1(1-0.40)}{4,25,000\ shares} = \frac{EBIT_3(1-0.40)-Rs.1,70,000}{2,12,500\ shares}$$

$$0.6\ EBIT = 1.2\ EBIT - ₹\ 3,40,000$$

$$EBIT = \frac{₹3,40,000}{0.6} = ₹\ 5,66,667$$

Indifference points between Plan I and Plan III is ₹ 5,66,667.

**5. Calculation of Present Value of cash flows**

| Year | PV factor @ 10% | Project A | | Project B | |
|---|---|---|---|---|---|
| | | Cash flows (₹) | Discounted Cash flows | Cash flows (₹) | Discounted Cash flows |
| 0 | 1.00 | (3,00,000) | (3,00,000) | (3,00,000) | (3,00,000) |
| 1 | 0.91 | 55,000 | 50,050 | 3,18,000 | 2,89,380 |
| 2 | 0.83 | 1,20,000 | 99,600 | 20,000 | 16,600 |
| 3 | 0.75 | 85,000(1,30,000-45,000) | 63,750 | 20,000 | 15,000 |
| 4 | 0.68 | 1,05,000 | 71,400 | 8,000 | 5,440 |
| 5 | 0.62 | 40,000 | 24,800 | 6,000 | 3,720 |
| Net Present Value | | | **9,600** | | **30,140** |

**(i) The Payback period of the projects:**

**Project-A:** The cumulative cash inflows up-to year 3 is ₹2,60,000 and remaining amount required to equate the cash outflow is ₹ 40,000 i.e. (₹ 3,00,000 – ₹ 2,60,000) which will be recovered from year-4 cash inflow. Hence, Payback period will be calculated as below:

$$3\ years + \frac{40,000}{1,05,000} = 3.381\ years\ or\ 3\ years,\ 4\ months,\ 9\ days\ (approx.)$$

**Project-B:** The cash inflow in year-1 is ₹ 3,18,000 and the amount required to equate the cash outflow is ₹ 3,00,000, which can be recovered in a period less than a year. Hence, Payback period will be calculated as below:

$$\frac{3,00,000}{3,18,000} = 0.943\ years\ or\ 11\ months$$

**(ii) Discounted Payback period for the projects:**

**Project-A:** The cumulative discounted cash inflows up-to year 4 is ₹ 2,84,800 and remaining amount required to equate the cash outflow is ₹ 15,200 i.e. (₹ 3,00,000 – ₹ 2,84,800) which will be recovered from year-5 cash inflow. Hence, Payback period will be calculated as below:

$$4 \text{ years} + \frac{15,200}{24,800} = 4.613 \text{ years or 4 years, 2 months, and 11 days}$$

**Project-B:** The cash inflow in year-1 is ₹2,89,380 and remaining amount required to equate the cash outflow is ₹ 10,620 i.e. (₹ 3,00,000 – ₹ 2,89,380) which will be recovered from year-2 cash inflow. Hence, Payback period will be calculated as below:

$$1 \text{ year} + \frac{10,620}{16,600} = 1.640 \text{ years or 1 Year, 7 months and 23 days.}$$

**(iii) Desirability factor of the projects**

$$\text{Desirability Factor (Profitability Index)} = \frac{\text{Discounted value Cash Inflows}}{\text{Discounted value of Cash Outflows}}$$

$$\textbf{Project A} = \frac{3,09,600}{3,00,000} = 1.032$$

$$\textbf{Project B} = \frac{3,30,140}{3,00,000} = 1.100$$

**(iv) Net Present Value (NPV) of the projects:**

Please refer the above table.

Project A- ₹ 9,600

Project B- ₹ 30,140

**6. (a) Business Risk and Financial Risk**

Business risk refers to the risk associated with the firm's operations. It is an unavoidable risk because of the environment in which the firm must operate, and the business risk is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses. Revenues and expenses are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost.

On the other hand, financial risk refers to the additional risk placed on firm's shareholders because of debt use in financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity. Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc.

**(b) Commercial Paper:** A Commercial Paper is an unsecured money market instrument issued in the form of a promissory note. The Reserve Bank of India introduced the commercial paper scheme in the year 1989 with a view to enabling highly rated corporate borrowers to diversify their sources of short- term borrowings and to provide an additional instrument to investors. Subsequently, in addition to the Corporate, Primary Dealers and All India Financial Institutions have also been allowed to issue Commercial Papers. Commercial papers are issued in denominations of ₹ 5 lakhs or multiples thereof and the interest rate is generally linked to the yield on the one-year government bond.

All eligible issuers are required to get the credit rating from Credit Rating Information Services of India Ltd, (CRISIL), or the Investment Information and Credit Rating Agency of India Ltd (ICRA) or the Credit Analysis and Research Ltd (CARE) or the FITCH Ratings India Pvt. Ltd or any such other credit rating agency as is specified by the Reserve Bank of India.

**(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.

## 8B: ECONOMICS FOR FINANCE

**1. (a)** The Challenges involved in Computation of National Income are as follows:

(a) Inadequacy of data and lack of reliability of available data

(b) Presence of non-monetised sector

(c) Production for self-consumption

(d) Absence of recording of incomes due to illiteracy and ignorance

(d) Lack of proper occupational classification, and

(e) Accurate estimation of consumption of fixed capital.

**(b)** Generally, the government's fiscal policy has a strong influence on the performance of the macro economy in terms of employment, price stability, economic growth, and external balance.

There is often a conflict between the different goals and functions of budgetary policy. Effective policy design to meet the diverse goals of government is very difficult to conceive and to implement. The challenge before any government is how to design its budgetary policy so that the pursuit of one goal does not jeopardize the other.

**(c)** Solution:

**GNP at MP Income Method** = 600 + 400 + 650 + 300 + 250 + 320 + (-10) + 200

= ₹ 2,710 crore

**GNP at MP Income Method** = 800 + 480 + (-20) + 350 + (-10) + 320

= ₹ 1920 crore

**2. (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 goods used to produce other goods rather than being sold to final purchasers are not counted as it would involve double counting.

**(b)** The increase in imports per unit of income constitutes an additional leakage from the circular flow of (domestic) income at each round of the multiplier process and reduces the value of the autonomous expenditure multiplier. Countries import goods that can be more efficiently produced abroad, and trade increases the overall efficiency of the worldwide allocation of resources. This forms the rationale for attempts to stimulate the domestic economy by promoting exports and restricting imports.

**(c)** The three-sector, three-market circular flow model which accounts for government intervention highlights the role played by the government sector. From the above flow chart, we can find that the government sector adds the following key flows to the model:

- Taxes on households and business sector to fund government purchases.
- Transfer payments to household sector and subsidy payments to the business sector
- Government purchases goods and services from business sector and factors of production from household sector, and
- Government borrowing in financial markets to finance the deficits occurring when taxes fall short of government purchases.

**(d)** Multiplier = K = $\Delta Y/\Delta I$ = 4000/800 = 5.

K = 1/1-MPC

5 - 5MPC =1

5MPC = 4

MPC = 0.8

Also, we know MPC +MPS = 1

Thus, MPS = 1 - 0.8

MPS = 0.2

MPS = $\Delta S/\Delta Y$

0.2 = $\Delta S$ / 4000

$\Delta S$ = ₹ 800

Change in Saving = ₹ 800.

**3. (a)** Production is carried out by the combined effort of all factors of production. The factors are paid factor incomes for the services rendered. In other words, whatever is produced by a producing unit is distributed among the factors of production for their services. Only incomes earned by owners of primary factors of production are included in national income. Thus, while wages of labourers will be included, pensions of retired workers will be excluded from national income. Compensation of employees includes, apart from wages and salaries, bonus, dearness allowance, commission, employers' contribution to provident fund and imputed value of compensation in kind. Non-labour income includes rent (actual and imputed), royalty, interest on loans availed for productive services, dividends, undistributed profits of corporations. before taxes, and profits of unincorporated enterprises and of government enterprises.

NNP FC or National Income= Compensation of employees

+ Operating Surplus (rent + interest+ profit)

+ Mixed Income of Self- employed

+ Net Factor Income from Abroad

**(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 commerce.
- 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)** Subsidy is a form of market intervention by government. It involves the government directly paying part of cost to the producers (or consumers) in order to promote the production (consumption) of goods and services. The aim of subsidy is to intervene with market equilibrium to reduce the costs and thereby the market price of goods and services and encourage increased production and consumption. Major subsidies in India are fertiliser subsidy, food subsidy, interest subsidy, etc.

**(d)** The four possible types of externalities are: Negative externality initiated in production which imposes an external cost on others. Positive production externality, less commonly seen, initiated in production that confers external benefits on others. Negative consumption externalities initiated in consumption which produce external costs on others. Positive consumption externality initiated in consumption that confers external benefits on others. Each of the above may be received by another in consumption or in production. The firm or the consumer as the case may be, however, has no incentive to account for the external costs that it imposes on consumers.

**4.** **(a)** The distribution function of the government aims at:

- redistribution of income to achieve an equitable distribution of societal output among households.
- advancing the well-being of those members of the society who suffer from deprivations of different types.
- providing equality in income, wealth and opportunities
- providing security (in terms of fulfilment of basic needs) for people who have hardships, and
- ensuring that everyone enjoys a minimal standard of living.

**(b)** There are many hybrid goods that possess some features of both public and private goods. These goods are called impure public goods and are partially rivalrous or congestible. Because of the possibility of congestion, the benefit that an individual gets from an impure public good depends on the number of users. Consumption of these goods by another person reduces, but does not eliminate, the benefits that other people receive from their consumption of the same good. For example, open-access Wi-Fi networks become crowded when more people access it. Impure public goods also differ from pure public goods in that they are often excludable.

**(c)** At a very high interest rate, say r*, the opportunity cost of holding money is high and therefore, people will hold no money in speculative balances. When interest rates fall to very low levels, the expectation is that since the interest rate is very low it cannot go further lower and that in all possibility it will move upwards. When interest rates rise, the bond prices will fall. To hold bonds at this low interest rate is to take the almost certain risk of a capital loss (as the interest rate rises and bond prices fall). Therefore, the desire to hold bonds is very low and approaches zero, and the demand to hold money in liquid form as alternative to bond holding approaches infinity. In other words, investors would maintain cash savings rather than hold bonds. The speculative demand becomes perfectly elastic with respect to interest rate and the speculative money demand curve becomes parallel to the X axis. This situation is called a 'Liquidity trap'.

Empirical evidence of liquidity trap is found during the global financial crisis of 2008 in the United States and Europe.

**(d)** Foreign direct investments can be made in a variety of ways, such as:

(i) Opening of a subsidiary or associate company in a foreign country

(ii) Equity injection into an overseas company

(iii) Acquiring a controlling interest in an existing foreign company

(iv) Mergers and Acquisitions

(v) Joint venture with a foreign company.

(vi) Green field investment

(vii) Brownfield investments

**5.** **(a)** An anti-dumping duty is a protectionist tariff that a domestic government imposes on foreign imports that it believes are priced below fair market value. Dumping occurs when manufacturers sell goods in a foreign country below the sales prices in their domestic market or below their full average cost of the product. Dumping may be persistent, seasonal, or cyclical. Dumping may also be resorted to as a predatory pricing practice to drive out established domestic producers from the market and to establish monopoly position.

Countervailing duties are tariffs that aim to offset the artificially low prices charged by exporters who enjoy export subsidies and tax concessions offered by the governments in their home country. If a foreign country does not have a comparative advantage in a particular good and a government subsidy allows the foreign firm to be an exporter of the product, then the subsidy generates a distortion from the free-trade allocation of resources.

**(b)** Nominal exchange rate refers to the rate at which a person can trade the currency of one country for the currency of another country. For any country, there are many nominal exchange rates because its currency can be used to purchase many foreign currencies.

Nominal Exchange Rates can be used to find the domestic price of foreign goods. However, trade flows are affected not by nominal exchange rates, but instead, by real exchange rates. The person or firm buying another currency is interested in what can be bought with it.

The real exchange rate is the rate at which a person can trade the goods and services of one country for the goods and services of another. It describes 'how many' of a good or service in one country can be traded for 'one' of that good or service in a foreign country. A country's real exchange rate is a key determinant of its net exports of goods and services.

**(c)** A free rider is a person who benefits from something without expending effort or paying for it. In other words, free riders are those who utilize goods without paying for their use. Example is Wikipedia, a free encyclopedia which faces a free rider problem. Hundreds of millions of people use Wikipedia every month but only a small part of users pay to use it. A large majority of Wikipedia users do not pay to use the site but are able to benefit from the information provided by the website. The free-rider problem occurs when everyone enjoys the benefits of a good without paying for it. Since private goods are excludable, free riding mostly occurs in the case of public goods. The free-rider problem leads to under- provision of a good or service and thus causes market failure.

**(d)** Sol. C = 200 + 0.75Y

We know; Y = C+I+G+(X-M)

Y = 200+0.75Y +700+ (-300)

0.25 Y = 600

Y = ₹ 2400

**OR**

The 'real exchange rate' incorporates changes in prices and describes 'how many' of a good or service in one country can be traded for 'one' of that good or service in a foreign country.

$$\text{Real exchange rate} = \text{Nominal exchange rate} \times \frac{\text{Domestic price Index}}{\text{Foreign price Index}}$$