

**(GI-7, VI-VDI-SI-3)**

DATE: 26.04.2022

MAXIMUM MARKS: 100

TIMING: 3¼ Hours

**FINANCIAL MANAGEMENT****SECTION - A****Q. No. 1 is compulsory.****Candidates are also required to answer any four questions from the remaining five questions.****In case, any candidate answers extra question(s)/sub-question(s) over and above the required number, then only the requisite number of questions top answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.****Working Notes should form part of the respective answer.****Answer 1:****(a) (i)****Computation of Average Inventory**

Gross Profit = 25% of Rs. 30,00,000 = Rs. 7,50,000

$$\text{Cost of goods sold (COGS)} = \text{Sales} - \text{Gross Profit} = \text{Rs. } 30,00,000 - \text{Rs. } 7,50,000$$

$$= \text{Rs. } 22,50,000 \quad \{1/2 \text{ M}\}$$

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

$$6 = \frac{\text{₹ } 22,50,000}{\text{Average inventory}}$$

Average inventory = Rs. 3,75,000 {1/2 M}

**(ii)****Computation of Purchases**

Purchases = COGS + (Closing Stock – Opening Stock) = Rs. 22,50,000 + 80,000\*

Purchases = Rs. 23,30,000

\* Increase in Stock = Closing Stock – Opening Stock = Rs. 80,000 {1/2 M}

**(iii)****Computation of Average Debtors**

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

Total Sales = 100 + 25 = Rs. 125

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

$$\text{If total sales is ₹ 30,00,000, then credit sales is} = \frac{\text{₹ } 30,00,000 \times 100}{125}$$

Credit Sales = ₹ 24,00,000 {1/2 M}

Cash Sales = (₹ 30,00,000 – ₹ 24,00,000) = ₹ 6,00,000

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average debtors}} = 8 = \frac{\text{₹ } 24,00,000}{\text{Average debtors}} = 8$$

$$\text{Average Debtors} = \frac{\text{₹ } 24,00,000}{8}$$

Average Debtors = ₹ 3,00,000 {1/2 M}

**(iv) Computation of Average Creditors**

$$\begin{aligned}\text{Credit Purchases} &= \text{Purchases} - \text{Cash Purchases} \\ &= ₹ 23,30,000 - ₹ 2,30,000 = ₹ 21,00,000\end{aligned}$$

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

$$10 = \frac{21,00,000}{\text{Average Creditors}}$$

$$\text{Average Creditors} = ₹ 2,10,000 \quad \{1/2 M\}$$

**(v) Computation of Average Payment Period**

$$\text{Average Payment Period} = \frac{\text{Average Creditors}}{\text{Average Daily Credit Purchases}}$$

$$\begin{aligned}&= \frac{₹ 2,10,000}{\left(\frac{\text{Credit Purchases}}{365}\right)} = \frac{₹ 2,10,000}{\left(\frac{₹ 21,00,000}{365}\right)} \\ &= \frac{₹ 2,10,000}{₹ 21,00,000} \times 365^* = 36.5 \text{ days} \quad \{1/2 M\}\end{aligned}$$

Alternatively

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

**(vi) Computation of Average Collection Period**

$$\text{Average Collection Period} = \frac{\text{Average Debtors}}{\text{Net Credit Sales}} \times 365^* = \frac{₹ 3,00,000}{₹ 24,00,000} \times 365 = 45.625 \text{ days}$$

Alternatively

$$\begin{aligned}\text{Average collection period} &= \frac{365^*}{\text{Debtors Turnover Ratio}} \\ &= \frac{365}{8} = 45.625 \text{ days} \quad \{1/2 M\}\end{aligned}$$

\* 1 year is taken as 365 days.

**(vii) Computation of Current Assets**

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

$$2.4 \text{ Current Liabilities} = \text{Current Assets or CL} = \text{CA} / 2.4$$

$$\text{Further, Working capital} = \text{Current Assets} - \text{Current liabilities}$$

$$\text{So, } ₹ 2,80,000 = \text{CA} - \text{CA} / 2.4$$

$$₹ 2,80,000 = 1.4 \text{ CA} / 2.4 \text{ Or, } 1.4 \text{ CA} = ₹ 16,72,000$$

$$\text{CA} = ₹ 4,80,000 \quad \{1/2 M\}$$

**(viii) Computation of Current Liabilities**

$$\text{Current liabilities} = \frac{4,80,000}{2.4} = ₹ 2,00,000 \quad \{1/2 M\}$$

**Answer:**

- (b) Pattern of raising Capital:  
 Portion of Debt = Rs. 20,00,000 × 25% = Rs. 5,00,000 and  
 Portion of Equity = Rs. 20,00,000 × 75% = Rs. 15,00,000, of this Rs. 4,00,000 is from retained earnings and Rs. 11,00,000 by issuing fresh equity shares. **{1 M}**

$$(i) \text{ Cost of Debt } (K_d) = \frac{\text{Total Interest } (1-t)}{\text{Debt}}$$

$$= \frac{(10\% \text{ of } ₹2,00,000 + 13\% \text{ of } ₹3,00,000)(1-0.3)}{₹5,00,000} = \frac{₹59,000(1-0.3)}{₹5,00,000} = 0.0826 \text{ or } 8.26\% \quad \mathbf{\{1 M\}}$$

$$(ii) \text{ Cost of Equity } (K_e) = \frac{\text{EPS} \times \text{Payout ratio } (1+g)}{P_0} + g$$

$$= \frac{₹12 \times 0.5(1+0.1)}{₹60} + 0.1 = 0.11 + 0.10 = 0.21 \text{ or } 21\% \quad \mathbf{\{1 M\}}$$

$$\text{Cost of retained earnings } (K_s) = K_e (1 - t_p) = 0.21(1 - 0.2) = 0.168 \text{ or } 16.8\% \quad \mathbf{\{1 M\}}$$

- (iii) Weighted average cost of capital ( $K_o$ )

| Source of capital | Amount (Rs.) | Proportion of total Capital | Cost of Capital (%) | WACC (%) |
|-------------------|--------------|-----------------------------|---------------------|----------|
| Equity Capital    | 11,00,000    | 0.55                        | 21.00               | 11.550   |
| Retained earning  | 4,00,000     | 0.20                        | 16.80               | 3.360    |
| Debt              | 5,00,000     | 0.25                        | 8.26                | 2.065    |
| Total             | 20,00,000    | 1.00                        |                     | 16.975   |

**{1 M}****Answer:**

- (c) Total Assets = Rs. 40 crores

$$\text{Total Asset Turnover Ratio i.e. } \frac{\text{Total Sales}}{\text{Total Assets}} = 2.5$$

$$\text{Hence, Total Sales} = 40 \times 2.5 = \text{Rs. 100 crores} \quad \mathbf{\{1/2 M\}}$$

Computation of Profits after Tax (PAT)

|   | (Rs. in crores) |
|---|-----------------|
| Sales                                   | 100             |
| Less: Variable operating cost @ 65%     | 65              |
| Contribution                            | 35              |
| Less: Fixed cost (other than interest)  | 8               |
| EBIT (Earning before interest and tax)  | 27              |
| Less: Interest on debentures (15% x 20) | 3               |
| EBT (Earning before tax)                | 24              |
| Less: Tax 40%                           | 9.6             |
| EAT (Earning after tax)                 | 14.4            |

**{1 M}**

- (i) Earnings per share

$$\therefore \text{EPS} = \frac{₹14.4 \text{ crores}}{1 \text{ crore equity shares}} = ₹14.40 \quad \mathbf{\{1/2 M\}}$$

(ii) **Operating Leverage**

$$\text{Operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{35}{27} = 1.296 \quad \{1/2 \text{ M}\}$$

It indicates fixed cost in cost structure. It indicates sensitivity of earnings before interest and tax (EBIT) to change in sales at a particular level. }{1/2 M}

(iii) **Financial Leverage**

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{27}{24} = 1.125 \quad \{1/2 \text{ M}\}$$

The financial leverage is very comfortable since the debt service obligation is small vis-à-vis EBIT. }{1/2 M}

(iv) **Combined Leverage**

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}} = 1.296 \times 1.125 = 1.458 \quad \{1/2 \text{ M}\}$$

The combined leverage studies the choice of fixed cost in cost structure and choice of debt in capital structure. It studies how sensitive the change in EPS is vis-à-vis change in sales. }{1/2 M}  
The leverages - operating, financial and combined are measures of risk.

**Answer:**

(d) (i)

**Calculation of NPV under three different scenarios**

(Amount in Rs.)

| Particulars  | 1st Scenario      | 2nd Scenario  | 3rd Scenario    |
|--|-------------------|---------------|-----------------|
| Annual Cash Flow                                     | 50,000            | 1,00,000      | 1,50,000        |
| PV of cash inflows (Annual Cash Flow $\times$ 4.33*) | 2,16,500          | 4,33,000      | 6,49,500        |
| PV of Residual Value (Rs. 40,000 $\times$ 0.784)     | 31,360            | 31,360        | 31,360          |
| Total PV of Cash Inflow                              | 2,47,860          | 4,64,360      | 6,80,860        |
| Initial investment                                   | 4,00,000          | 4,00,000      | 4,00,000        |
| <b>NPV</b>   | <b>(1,52,140)</b> | <b>64,360</b> | <b>2,80,860</b> |

$$* .952 + .907 + .864 + .823 + .784 = 4.33$$

{1 M}

{1 M}

{1 M}

(ii)

**Calculation of Expected Net present Value under three different scenarios**

| Particulars                                   | 1st Scenario | 2nd Scenario | 3rd Scenario | Total (Rs. )  |
|---|--------------|--------------|--------------|---------------|
| Annual Cash Flow                              | Rs. 50,000   | Rs. 1,00,000 | Rs. 1,50,000 |               |
| Probability                                   | 0.3          | 0.3          | 0.4          |               |
| Expected Value                                | Rs. 15,000   | Rs. 30,000   | Rs. 60,000   | 1,05,000      |
| PV of Expected value (1,05,000 $\times$ 4.33) |              |              |              | 4,54,650      |
| PV of Residual Value (40,000 $\times$ 0.784)  |              |              |              | 31,360        |
| Total PV of Cash Inflow                       |              |              |              | 4,86,010      |
| Initial investment                            |              |              |              | 4,00,000      |
| <b>Expected Net Present Value</b>             |              |              |              | <b>86,010</b> |

{1<sup>1/2</sup> M}

(iii) Since the expected net present value of the Investment is positive, the Investment should be undertaken. }{1/2 M}

**Answer 2:**

- (a) (i) Cost of Project 'M'  
 At 15% internal rate of return (IRR), the sum of total cash inflows = cost of the project i.e initial cash outlay  
 Annual cash inflows = Rs. 60,000  
 Useful life = 4 years  
 Considering the discount factor table @ 15%, cumulative present value of cash inflows for 4 years is 2.855 (0.869 + 0.756 + 0.658 + 0.572)  
 Hence, Total Cash inflows for 4 years for Project M is  
 $\text{Rs. } 60,000 \times 2.855 = \text{Rs. } 1,71,300$   
 Hence, Cost of the Project = Rs. 1,71,300 }{1<sup>1/2</sup> M}
- (ii) Payback Period  

$$\text{Payback period} = \frac{\text{Cost of the Project}}{\text{Annual Cash Inflows}} = \frac{\text{₹ } 1,71,300}{\text{₹ } 60,000} = 2.855 \text{ years } \}{1^{1/2} \text{ M}}$$
- (iii) Cost of Capital  

$$\text{Profitability index} = \frac{\text{Sum of Discounted Cash inflows}}{\text{Cost of the Project}}$$

$$1.064 = \frac{\text{Sum of Discounted Cash inflows}}{\text{₹ } 1,71,300}$$

$$\therefore \text{Sum of Discounted Cash inflows} = \text{₹ } 1,82,263.20$$
 Since, Annual Cash Inflows = ₹ 60,000  

$$\text{Hence, cumulative discount factor for 4 years} = \frac{\text{₹ } 1,82,263.20}{\text{₹ } 60,000}$$

From the discount factor table, at discount rate of 12%, the cumulative discount factor for 4 years is 3.038 (0.893 + 0.797 + 0.712 + 0.636)  
 Hence, Cost of Capital = 12% }{1<sup>1/2</sup> M}

(iv) Net Present Value (NPV)  

$$\text{NPV} = \text{Sum of Present Values of Cash inflows} - \text{Cost of the Project}$$

$$= \text{Rs. } 1,82,263.20 - \text{Rs. } 1,71,300 = \text{Rs. } 10,963.20$$
 Net Present Value = Rs. 10,963.20 }{1<sup>1/2</sup> M}

**Answer:****(b)**

|                                 | Rs. in lakhs     |        |
|---------------------------------|------------------|--------|
| Net Profit                      | 60               | }{1 M} |
| Less: Preference dividend       | 10               |        |
| Earning for equity shareholders | 50               |        |
| Therefore earning per share     | 50/5 = Rs. 10.00 |        |

Price per share according to Gordon's Model is calculated as follows:

$$P_0 = \frac{E_1(1-b)}{K_e - br}$$

Here,  $E_1 = 10$ ,  $K_e = 14\%$ ,  $r = 20\%$

(i) When dividend pay-out is 25%

$$P_0 = \frac{10 \times 0.25}{0.14 - (0.75 \times 0.2)} = \frac{2.5}{0.14 - 0.15} = -250 \quad \{1 M\}$$

As per the Gordon's Dividend relevance model, the Cost of equity ( $K_e$ ) should be greater than the growth rate i.e.  $br$ . In this case  $K_e$  is 14% and  $br = 15\%$ , hence, the equity investors would prefer capital appreciation than dividend.

(ii) When dividend pay-out is 50%

$$P_0 = \frac{10 \times 0.5}{0.14 - (0.5 \times 0.2)} = \frac{5}{0.14 - 0.10} = 125 \quad \{1 M\}$$

(iii) When dividend pay-out is 100%

$$P_0 = \frac{10 \times 1}{0.14 - (0 \times 0.2)} = \frac{10}{0.14} = 71.43 \quad \{1 M\}$$

### Answer 3:

#### 1. Raw Material Storage Period (R)

$$\begin{aligned} &= \frac{\text{Average Stock of Raw Material}}{\text{Annual Consumption of Raw Material}} \times 365 \\ &= \frac{\frac{\text{₹ } 45,000 + \text{₹ } 65,356}{2}}{\text{₹ } 3,79,644} \times 365 \\ &= 53 \text{ days. } \{1 M\} \end{aligned}$$

Annual Consumption of Raw Material = Opening Stock + Purchases - Closing Stock

$$= \text{₹ } 45,000 + \text{₹ } 4,00,000 - \text{₹ } 65,356$$

$$= \text{₹ } 3,79,644 \quad \{1 M\}$$

#### 2. Work-in-Progress (WIP) Conversion Period (W)

$$\begin{aligned} \text{WIP Conversion Period} &= \frac{\text{Average Stock of WIP}}{\text{Annual Cost of Production}} \times 365 \\ &= \frac{\frac{\text{₹ } 35,000 + \text{₹ } 51,300}{2}}{\text{₹ } 7,50,000} \times 365 \\ &= 21 \text{ days } \{1 M\} \end{aligned}$$

#### 3. Finished Stock Storage Period (F)

$$= \frac{\text{Average Stock of Finished Goods}}{\text{Cost of Goods Sold}} \times 365$$



$$= \frac{₹ 65,178}{₹ 9,15,000} \times 365 = 26 \text{ days. } \{1\text{M}\}$$

$$\text{Average Stock} = \frac{₹ 60,181 + ₹ 70,175}{2} \\ = ₹ 65,178.$$

4. Debtors Collection Period (D)

$$= \frac{\text{Average Debtors}}{\text{Annual Credit Sales}} \times 365$$

$$= \frac{₹ 1,23,561.50}{₹ 11,00,000} \times 365$$

$$= 41 \text{ days } \{1\text{M}\}$$

$$\text{Average debtors} = \frac{₹ 1,12,123 + ₹ 1,35,000}{2} = ₹ 1,23,561.50$$

5. Creditors Payment Period (C)

$$= \frac{\text{Average Creditors}}{\text{Annual Net Credit Purchases}} \times 365$$

$$= \frac{\left\{ \frac{₹ 50,079 + ₹ 70,469}{2} \right\}}{₹ 4,00,000} \times 365$$

$$= 55 \text{ days } \{1\text{M}\}$$

(i) Operating Cycle Period

$$= R + W + F + D - C$$

$$= 53 + 21 + 26 + 41 - 55$$

$$= 86 \text{ days } \{1\text{M}\}$$

(ii) Number of Operating Cycles in the Year

$$= \frac{365}{\text{Operating Cycle Period}} = \frac{365}{86} = 4.244 \{1\text{M}\}$$

(iii) Amount of Working Capital Required

$$= \frac{\text{Annual Operating Cost}}{\text{Number of Operating Cycles}} = \frac{₹ 9,50,000}{4.244} = ₹ 2,23,845.42 \{2\text{M}\}$$

Answer 4:

Statement Showing Evaluation of Debtors Policies

|    | Particulars                                   | Present Policy | Proposed Policy |
|----|---|----------------|-----------------|
| A. | Expected Profit                               |                |                 |
|    | (a) Credit Sales                              | 2,56,48,750    | 2,82,13,625     |
|    | (b) Less: Total Cost other than Bad Debts     | 1,84,67,100    | 2,03,13,810     |
|    | (c) Less: Bad Debts                           | 3,84,731       | 5,64,273        |
|    | (d) Profit before tax [(a)-(b)-(c)]           | 67,96,919      | 73,35,542       |
|    | (e) Less: Tax @ 35%                           | 23,78,922      | 25,67,440       |
|    | (f) Profit after tax [(d)-(e)]                | 44,17,997      | 47,68,102       |
| B. | Opportunity Cost of investment in Receivables | 3,46,258       | 5,07,845        |
| C. | Net Benefits [A-B]                            | 40,71,739      | 42,60,257       |

**Recommendation :** Proposed Policy should be implemented since the net benefit under this policy are higher than those under present policy.

**Working Note: Opportunity Costs of Average Investments**

$$= \text{Total Cost} \times \frac{\text{Collection Period}}{360 \text{ days}} \times \text{Rate of Return}$$

$$\text{Present Policy} = ₹ 1,84,67,100 \times \frac{45}{360} \times 15\% = ₹ 3,46,258 \{2\text{M}\}$$

$$\text{Proposed Policy} = ₹ 2,03,13,810 \times \frac{60}{360} \times 15\% = ₹ 5,07,845 \{2\text{M}\}$$

**Answer 5:****(a)**

|                                 | ₹ in lakhs    | } {1/2 M} |
|---------------------------------|---------------|-----------|
| Net Profit                      | 30            |           |
| Less: Preference dividend       | 12            |           |
| Earning for equity shareholders | 18            |           |
| Therefore earning per share     | 18/3 = ₹ 6.00 |           |

Price per share according to Gordon's Model is calculated as follows:

$$P_0 = \frac{E_1(1-b)}{K_e - br}$$

Here,  $E_1 = 6$ ,  $K_e = 16\%$

(i) When dividend pay-out is 25%

$$P_0 = \frac{6 \times 0.25}{0.16 - (0.75 \times 0.2)} = \frac{1.5}{0.16 - 0.15} = 150 \text{ } \{1^{1/2} \text{ M}\}$$

(ii) When dividend pay-out is 50%

$$P_0 = \frac{6 \times 0.5}{0.16 - (0.5 \times 0.2)} = \frac{3}{0.16 - 0.10} = 50 \text{ } \{1^{1/2} \text{ M}\}$$

(iii) When dividend pay-out is 100%

$$P_0 = \frac{6 \times 1}{0.16 - (0 \times 0.2)} = \frac{6}{0.16} = 37.50 \text{ } \{1^{1/2} \text{ M}\}$$

**Answer:****(b)**

Annual Benefit of accepting the Discount

$$\frac{\text{Rs. } 1.5}{\text{Rs. } 100 - \text{Rs. } 1.50} \times \frac{365 \text{ days}}{40 - 10 \text{ days}} = 18.53\% \text{ } \{2 \text{ M}\}$$

Annual Cost = Opportunity Cost of foregoing interest on investment = 15%

If average invoice amount is ₹ 10,00,000

|  | If discount is  |                     |
|--|-----------------|---------------------|
|  | Accepted<br>(₹) | Not Accepted<br>(₹) |
| Payment to Supplier (₹)  | 9,85,000        | 10,00,000           |
| Return on investment of ₹9,85,000 for 30 days<br>{ ₹ 9,85,000 × (30/365) × 15% } |                 | (12,144)            |
| {1 M}  | 9,85,000        | 9,87,856 {1 M}      |

Thus, from above table it can be seen that it is cheaper to accept the discount. {1 M}



**Answer 6:**

- (a) (i) **Euro bonds:** Euro bonds are debt instruments which are not denominated in the currency of the country in which they are issued. E.g. a Yen note floated in Germany. {1 M}
- (ii) **Floating Rate Notes:** Floating Rate Notes: are issued up to seven years maturity. Interest rates are adjusted to reflect the prevailing exchange rates. They provide cheaper money than foreign loans. {1 M}
- (iii) **Euro Commercial Paper (ECP):** ECPs are short term money market instruments. They are for maturities less than one year. They are usually designated in US Dollars. {1 M}
- (iv) **Fully Hedged Bond:** In foreign bonds, the risk of currency fluctuations exists. Fully hedged bonds eliminate the risk by selling in forward markets the entire stream of principal and interest payments. {1 M}

**Answer:**

- (b) (i) **Lease may low cost alternative:** Leasing is alternative to purchasing. As the lessee is to make a series of payments for using an asset, a lease arrangement is similar to a debt contract. The benefit of lease is based on a comparison between leasing and buying an asset. Many lessees find lease more attractive because of low cost.
- (ii) **Tax benefit:** In certain cases tax benefit of depreciation available for owning an asset may be less than that available for lease payment
- (iii) **Working capital conservation:** When a firm buy an equipment by borrowing from a bank (or financial institution), they never provide 100% financing. But in case of lease one gets normally 100% financing. This enables conservation of working capital. {0.75 for Each Point for Any 4}
- (iv) **Preservation of Debt Capacity:** So, operating lease does not matter in computing debt equity ratio. This enables the lessee to go for debt financing more easily. The access to and ability of a firm to get debt financing is called debt capacity (also, reserve debt capacity).
- (v) **Obsolescence and Disposal:** After purchase of leased asset there may be technological obsolescence of the asset. That means a technologically upgraded asset with better capacity may come into existence after purchase. To retain competitive advantage the lessee as user may have to go for the upgraded asset.

**Answer:**

- (c) Two Main Objective of Financial Management Two objectives of financial management are:

- (i) **Profit Maximisation**  
It has traditionally been argued that the primary objective of a company is to earn profit; hence the objective of financial management is also profit maximisation. {1<sup>1/2</sup> M}
- (ii) **Wealth / Value Maximization**  
Wealth / Value Maximization Model. Shareholders wealth are the result of cost benefit analysis adjusted with their timing and risk i.e. time value of money. This is the real objective of Financial Management. So, {1<sup>1/2</sup> M}
- Wealth = Present Value of benefits – Present Value of Costs

**ECONOMICS FOR FINANCE****SECTION - B****Q. No. 7 is compulsory.****Answer any three from the rest.**

**In case, any candidate answers extra question(s)/sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.**

**Working Notes should form part of the respective answer.**

**Answer 7:**

- (a) (i) Value added by Firm A and Firm B**
- Gross Value Added (GVAMP) of Firm A = Gross value of output (GVOMP) of Firm A
- Intermediate consumption of firm A  
 = (Sales by firm A + Change in stock of firm A) - (Purchases by firm A)  
 = [(ii) + (iv)] - (vii) = (1500 + 200) - 270  
 = **1430 Crores**
- Gross Value Added (GVAMP) of Firm B = Gross value of output (GVOMP) of firm B
- Intermediate consumption of firm B  
 = [Sales by firm B to general government + Sales by firm B to households + (Closing stock of firm B - Opening stock of firm B)] - Purchases by firm B  
 = [(300 + 1350) + (140 - 130)] - 300  
 = 1650 + 10 - 300 = Rs. **1360 Crores**
- (ii) Gross Domestic product at Market Price:**  
 = Value added by firm A + Value added by firm B = 1430 + 1360 = Rs. **2790 Crores**
- (iii) Net Domestic Price at Factor Cost:**  
 NDP FC = Gross Domestic product at market price - Consumption of fixed capital - Indirect taxes paid by both the firms  
 = 2790 - (ix) - (viii) = 2790 - 720 - (375 - 0) = Rs. **1695 Crores**

**Answer:**

- (b)** Changes in exchange rates portray depreciation or appreciation of one currency against another. The terms, 'currency appreciation' and 'currency depreciation' describe the movements of the exchange rate. Currency appreciates when its value increases with respect to the value of another currency or a basket of other currencies. On the contrary, currency depreciates when its value falls with respect to the value of another currency or a basket of other currencies. If the Rupee dollar exchange rate changes from \$1 = Rs. 65 to \$1 = Rs. 68, the value of the Indian Rupee has diminished or Indian Rupee has depreciated and the US dollar has appreciated. On the contrary, home-currency appreciation or foreign-currency depreciation takes place when there is a decrease in the home currency price of foreign currency (or alternatively, an increase in the foreign currency price of home currency). The home currency thus becomes relatively more valuable. Under a floating rate system, if for any reason, the demand curve for foreign currency shifts to the right representing increased demand for foreign currency, and supply curve

remains unchanged, then the exchange value of foreign currency rises and the domestic currency depreciates in value.

Following are the impact of exchange rate changes on the real economy:

The developments in the foreign exchange markets affect the domestic economy both directly and indirectly. All else equal, an appreciation(depreciation) of a country's currency raises (decreases) the relative price of its exports and lowers (increases) the relative price of its imports leading to changes in import and export volumes and consequently on import spending and export revenue. Depreciation adversely affects importers as they have to pay more domestic currency on the same quantity of imports and benefits exporters as forex earnings will fetch more in terms of domestic currency.

For an economy where exports are significantly high, a depreciated currency would mean a lot of gain. Depreciation of domestic currency primarily decreases the relative price of domestically produced goods and diverts spending from foreign goods to domestic goods. Increased demand, both for domestic import-competing goods and for exports encourages economic activity and creates output expansion. Overall, the outcome of exchange rate depreciation is an expansionary impact on the economy at an aggregate level.

As a result of depreciation or devaluation, the terms of trade of the nation can rise, fall or remain unchanged, depending on whether price of exports rises by more than, less than or same percentages as price of imports. Depreciation also can have a positive impact on country's trade deficit as it makes imports more expensive for domestic consumers and exports cheaper for foreigners. However, the fiscal health of a country whose currency depreciates is likely to be affected with rising import payments and consequent rising current account deficit (CAD) and diminished growth prospects of overall economy.

{1 M}

Depreciation is also likely to fuel consumer price inflation, directly through its effect on prices of imported consumer goods and also due to increased demand for domestic goods. The impact will be greater if the composition of domestic consumption baskets consists more of imported goods. Indirectly, cost push inflation may result through possible escalation in the cost of imported components and intermediaries used in production.

When a country's currency depreciates, production of export goods and import substitutes becomes more profitable. Therefore, factors of production will be induced to move into the tradable goods sectors and out of the non-tradable goods sectors. By lowering export prices, currency depreciation helps increase the international competitiveness of domestic industries, increases the volume of exports, augments windfall profits in export oriented sectors and import-competing industries and promotes trade balance. If exports originate from labour-intensive industries, increased export prices will have spiraling effects on wages, employment and income. If inputs and components for manufacturing are mostly imported and cannot be domestically produced, increased import prices will increase firms' cost of production, push domestic prices up and decrease real output.

{1 M}

Foreign capital inflows are characteristically vulnerable to exchange rate fluctuations. Depreciating currency hits investor sentiments and has radical impact on patterns of international capital flows. Foreign investors are likely to be indecisive or highly cautious before investing in a country which has high exchange rate volatility. Foreign direct investment flows are likely to shrink and foreign portfolio investments are likely to flow into debt and equity. This may shoot up capital account deficits affecting the country's fiscal health. Reduced foreign investments also widen the gap between investments required for growth and actual investments. Over a period of time, unemployment is likely to mount in the economy.

If investor sentiments are such that they anticipate further depreciation, there may be large scale withdrawal of portfolio investments and huge redemptions through global exchange traded funds leading to further depreciation of domestic currency. This may result in a highly volatile domestic equity market affecting the confidence of domestic investors.

Companies that have borrowed in foreign exchange through external commercial borrowings (ECBs) but have not sufficiently hedged against foreign exchange risks would also be negatively impacted as they would require more domestic currency to repay their loans. A depreciated domestic currency would also increase their debt burden and lower their profits and impact their balance sheets adversely. Exchange rate fluctuations make financial forecasting more difficult for firms and larger amounts will have to be earmarked for insuring against exchange rate risks through hedging.

Investors who have purchased a foreign asset, or the corporation which floats a foreign debt, will find themselves facing foreign exchange risk. However, remittances to homeland by non-residents and businesses abroad fetch more in terms of domestic currency.

In case of foreign currency denominated government debts, currency depreciation will increase the interest burden and cause strain to the exchequer for repaying and servicing foreign debt.

Depreciation would enhance government revenues from import related taxes, especially if the country imports more of essential goods. Depreciation would also result in higher amount of local currency for a given amount of foreign currency borrowings of government.

#### Answer:

- (c) Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others. This rival nature of common resources is what distinguishes them from pure public goods, which exhibit both non-excludability and non-rivalry in consumption. They are generally available free of charge. Some important natural resources fall into this category. {1 M}
- Since price mechanism does not apply to common resources, producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation. This creates threat to the sustainability of these resources and, therefore, the availability of common access resources for future generations. {1 M}
- Economists use the term 'tragedy of the commons' to describe the problem which occurs when rivalrous but non excludable goods are overused, to the disadvantage of the entire world.

#### Answer 8:

- (a) Since FDI involves setting up of production base (in terms of factories, power plants, etc.) it generates direct employment in the recipient country. Subsequent FDI as well as domestic investments propelled in the downstream and upstream projects that come up in multitude of other services generate multiplier effects on employment and income. FDI not only creates direct employment opportunities but also, through backward and forward linkages, it is able to generate indirect employment opportunities as well. It is also argued that more indirect employment will be generated to persons in the lower-end services sector occupations thereby catering to an extent even to the less educated and unskilled engaged in those units. This impact is particularly important if the recipient country is a developing country with an excess supply of labour caused by population pressure. {2 M}

Foreign direct investments also promote relatively higher wages for skilled jobs. However, jobs that require expertise and entrepreneurial skills for creative decision making may generally be retained in the home country and therefore the host country is left with routine management jobs that demand only lower levels of skills and ability. This may result in 'crowding in' of people in jobs requiring low skills, perpetuation of low labour standards and differential treatment.

FDIs are likely use labor-saving technology and capital-intensive methods in a labour - abundant country and cause labour displacement. Such technology is inappropriate for a labour-abundant country as it does not support generation of jobs which is a crucial requirement to address poverty and unemployment which are the two fundamental areas of concern for the less developed countries. Not only that foreign entities fail to support employment generation, but they may also drive out domestic firms from the industry resulting in serious problems of displacement of labour.

{1 M}

**Answer:**

- (b) Consumption function is the functional relationship between aggregate consumption expenditure and aggregate disposable income, expressed as  $C = f(Y)$ ; shows the level of consumption (C) corresponding to each level of disposable income (Y) {1 M}
- Aggregate expenditures in excess of output lead to a higher price level once the economy reaches full employment. Nominal output will increase, but it merely reflects higher prices, rather than additional real output. {1 M}

**Answer:**

- (c) Market failure is a situation in which the free market fails to allocate resources efficiently in the sense that there is either overproduction or underproduction of particular goods and services leading to less than optimal market outcomes. The reason for market failure lies in the fact that though perfectly competitive markets work efficiently, most often the prerequisites of competition are unlikely to be present in an economy. There are two aspects of market failures namely, demand-side market failures and supply side market failures. Demand-side market failures are said to occur when the demand curves do not take into account the full willingness of consumers to pay for a product. Supply-side market failures happen when supply curves do not incorporate the full cost of producing the product. {1 M}
- There are four major reasons for market failure. They are: market power, externalities, public goods, and incomplete information.
- (1) Excess market power or monopoly power causes the single producer or small number of producers to produce and sell less output than would be produced in a competitive market and to charge higher prices that give them positive economic profits.
  - (2) Externalities, also referred to as 'spillover effects', 'neighbourhood effects' 'third - party effects' or 'side-effects', occur when the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price. Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to buy. {Each point 1/2 Mark}
  - (3) Public goods (also referred to as a collective consumption good or a social good) are indivisible goods which all individuals enjoy in common and are non excludable and non rival in consumption. Each individual's consumption of such a good leads to no subtraction from any other individual's consumption and consumers cannot (at least at less than prohibitive cost) be excluded from consumption benefits of that good. Public goods do not conform to the settings of market exchange and left to the market, they will not be produced at all or will be under produced.

- (4) Incomplete information: The assumption of complete information which is a feature of competitive markets is not fully satisfied in real markets due to highly complex nature of products and services, inability of consumers to quickly / cheaply find sufficient information, inaccurate or incomplete data, ignorance, lack of alertness and uncertainty about true costs and benefits. Misallocation of scarce resources occurs due to information failure and equilibrium price and quantity is not established through price mechanism. Asymmetric information also referred to as the 'lemons problem' which occurs when there is an imbalance in information between buyer and seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer also distort choices and cause market failure. Adverse selection, another source of market failure, is a situation in which asymmetric information about quality eliminates high- quality goods from a market. Moral hazard i.e. opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action arises from lack of information about someone's future behavior also causes market failure. In short, asymmetric information, adverse selection and moral hazard affect the ability of markets to efficiently allocate resources and therefore lead to market failure because the party with better information has a competitive advantage.

**Answer:**

- (d) 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. This approach holds that total supply of nominal money in the economy is determined by the joint behaviour of the central bank, the commercial banks and the public. The money supply is defined as
- $$M = m \times MB$$
- Where M is the money supply,  $m$  is money multiplier and MB is the monetary base or high powered money.
- $$\text{Money Multiplier (m)} = \frac{\text{Money Supply}}{\text{Monetary Base}}$$
- Money multiplier  $m$  is defined as a ratio that relates the change in the money supply to a given change in the monetary base. It denotes by how much the money supply will change for a given change in high-powered money. The multiplier indicates what multiple of the monetary base is transformed into money supply.
- If some portion of the increase in high-powered money finds its way into currency, this portion does not undergo multiple deposit expansion. In other words, as a rule, an increase in the monetary base that goes into currency is not multiplied, whereas an increase in monetary base that goes into supporting deposits is multiplied.

**Answer 9:**

- (a) Many developed and developing economies are facing the challenge of rising inequality in incomes and opportunities. Redistribution of income to ensure distributive justice is essentially a fiscal function. Fiscal policy is a chief instrument available for governments to influence income distribution and plays a significant role in reducing inequality and achieving equity and social justice. The distribution of income in the



society is influenced by fiscal policy both directly and indirectly. While current disposable incomes of individuals and corporates are dependent on direct taxes, the potential for future earnings is indirectly influenced by the nation's fiscal policy choices.

Government revenues and expenditure have traditionally been regarded as important instruments for carrying out desired redistribution of income. Each of these can be manipulated to achieve desired distributional effects.

- A progressive direct tax system appropriately designed to protect incentives ensures that those who have greater ability to pay contribute more towards defraying the expenses of government and that the tax burden is distributed fairly among the population.
- Indirect taxes can be differential: for example, the commodities which are primarily consumed by the richer income group, such as luxuries, are taxed heavily and the commodities the expenditure on which form a larger proportion of the income of the lower income group, such as necessities, are taxed light. Property taxes act both as a source of revenue and as an efficient redistributive instrument.
- A carefully planned policy of public expenditure helps in redistributing income from the rich to the poorer sections of the society. This is done through spending programmes targeted on welfare measures for the disadvantaged, such as:
  - (i) poverty alleviation programmes
  - (ii) free or subsidized medical care, education, housing, essential commodities etc. to improve the quality of living of poor
  - (iii) infrastructure provision on a selective basis
  - (iv) various social security schemes and more efficient social transfers under which people are entitled to noncontributory, means-tested social pensions, conditional cash transfer programs, unemployment relief, sickness allowance etc.
  - (v) subsidized production of products of mass consumption
  - (vi) public production and/ or grant of subsidies to ensure sufficient supply of essential goods, and
  - (vii) strengthening of human capital for enhancing employability etc.

{2 M}

{2 M}

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

### Answer:

- (b)** 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. The RBI may set the ratio in keeping with the broad objective of maintaining monetary stability in the economy. The credit creation capacity of commercial banks is inversely related the cash reserve ratio. Higher the CRR, lower will be the credit creation and vice versa.

{2 M}

CRR has, in recent years, assumed significance as one of the important quantitative tools aiding in liquidity management. Higher the CRR with the RBI, lower will be the liquidity in the system and vice versa. During deflation, the RBI reduces the CRR in order to enable the banks to expand credit and increase the supply of money available in the economy. In order to contain credit expansion during periods of inflation, the RBI increases the CRR.

{1 M}

**Answer:**

- (c) 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. Dumping is international price discrimination favouring buyers of exports, but in fact, the exporters deliberately forego money in order to harm the domestic producers of the importing country and to gain market share. This is an unfair trade practice and constitutes a threat to domestic producers. {1 M}
- Anti-dumping measures consist of imposition of additional import duties to offset the effects of dumping. These measures are initiated as safeguards to offset the foreign firm's unfair price advantage. This is justified only if the domestic industry is seriously injured by import competition, and protection is in the national interest (that is, the associated costs to consumers would be less than the benefits that would accrue to producers). {1 M}

**Answer 10:**

- (a) Market Stabilization Scheme 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. {1 M}
- (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). 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. {2 M}

**Answer:**

- (b) Local content requirements (LCRs) are conditions imposed by a host country government that require investing firms to purchase and use domestically manufactured goods or domestically supplied services in order to operate in an economy. The fraction of a final good to be procured locally may be specified either in value terms (e.g. 25% of the value of a product must be locally produced), by requiring that some minimum share of the value of a good represent home value added, or in physical units (eg. 50% of component parts for a product must be locally produced). {2 M}
- From the viewpoint of domestic producers of inputs, local content requirement provides greater demand which is not necessarily associated to their competitiveness and for components/ parts manufacturers gives protection in the same way that an import quota would. Local content requirement benefits producers and not consumers because such requirements may raise the prices. {1 M}

**Answer:**

- (c) The GATT lost its relevance by 1980s because-
- (i) It was obsolete to the fast evolving contemporary complex world trade scenario characterized by emerging globalization.
  - (ii) International investments had expanded substantially.
  - (iii) Intellectual property rights and trade in services were not covered by GATT.
  - (iv) World merchandise trade increased by leaps and bounds and was beyond its scope.
  - (v) The ambiguities in the multilateral system could be heavily exploited.
  - (vi) Efforts at liberalizing agricultural trade were not successful.
  - (vii) There were inadequacies in institutional structure and dispute settlement system.
  - (viii) It was not a treaty and therefore terms of GATT were binding only insofar as they are not incoherent with a nation's domestic rules.
- {Any 4 Points each 1/2 Mark}

**Answer:**

- (d) GDP measures what is produced or created over the current time period and excludes all non-production transactions. Only incomes earned by owners of primary factors of production for services rendered in production are included in national income. } {1 M}
- Transfer payments, both private and government, are made without goods or services being received in return. These payments do not correspond to return for contribution to production because they do not directly absorb resources or create output. } {1 M}
- Therefore, transfer incomes such as pensions and other social security payments are excluded from national income.

**Answer 11:**

- (a) The major issues are:
- (i) The progress of multilateral negotiations on trade liberalization is very slow and the requirement of consensus among all members acts as a constraint and creates rigidity in the system. As a result, countries find regionalism a plausible alternative.
  - (ii) The complex network of regional agreements introduces uncertainties and murkiness in the global trade system.
  - (iii) While multilateral efforts have effectively reduced tariffs on industrial goods, the achievement in liberalizing trade in agriculture, textiles, and apparel, and in many other areas of international commerce has been negligible.
  - (iv) The latest negotiations, such as the Doha Development Round, have run into problems, and their definitive success is doubtful.
  - (v) Most countries, particularly developing countries are dissatisfied with the WTO because, in practice, most of the promises of the Uruguay Round agreement to expand global trade has not materialized.
  - (vi) The developing countries have raised a number of concerns and a few are presented here:
    - The real expansion of trade in the three key areas of agriculture, textiles and services has been dismal.
    - Protectionism and lack of willingness among developed countries to provide market access on a multilateral basis has driven many developing countries to seek regional alternatives.
    - The developing countries have raised a number of issues in the Doha Agenda in respect of the difficulties that they face in implementing the present agreements.
    - The North-South divide apparent in the WTO ministerial meets has fuelled the apprehension of developing countries about the prospect of trade expansion under the WTO regime.
    - Developing countries complain that they face exceptionally high tariffs on selected products in many markets and this obstructs their vital exports.
    - Another major issue concerns 'tariff escalation' where an importing country protects its processing or manufacturing industry by setting lower duties on imports of raw materials and components, and higher duties on finished products.
    - There is also possible erosion of preferences i.e. the special tariff concessions granted by developed countries on imports from certain developing countries have become less meaningful because of the narrowing of differences between the normal and preferential rates.
    - The least-developed countries find themselves disproportionately disadvantaged and vulnerable with regard to adjustments due to lack of human as well as physical capital, poor infrastructure, inadequate institutions, political instabilities etc.

{ Any 6 Points each 1/2 Mark }

**Answer:**

- (b) Yes, there is still scope for mutually beneficial trade. } {1 M}  
The first step is that nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller and import the commodity in which its absolute disadvantage is greater. This can be explained with the help of an example (Theory of Comparative Advantage). } {2 M}

**Answer:**

- (c) The market outcomes of different situations are given below;  
(i) Negative consumption externality; social cost not accounted for; market failure; overproduction } {1 M}  
(ii) Negative consumption externality; environmental externality; wear and tear of roads; increased fuel consumption; added insecurity imposed on others; social cost not accounted for; overproduction. } {1 M}

**Answer:**

- (d) Quasi-public goods or services, also called a near public good (for e.g. education, health services) possess nearly all the qualities of private goods and some of the benefits of public good. These goods are, in some measure excludable for example, it is possible to exclude non paying consumers from the use of a highway by incurring the cost of building and maintaining a toll booth. Similarly beaches, parks and wifi networks become partially rival and partially diminishable at times of peak demand. These are rejectable to some extent. It is possible to keep people away from them by charging a price or fee. However, it is undesirable to keep people away from such goods because the society would be better off if more people consume them. This particular characteristic namely, the combination of virtually infinite benefits and the ability to charge a price results in some quasi-public goods being sold through markets and others being provided by government. As such, people argue that these should not be left to the market alone. Markets for the quasi-public goods are considered to be incomplete markets and their lack of provision by free markets would be considered as inefficiency and market failure. } {1 M}

\_\_ \*\* \_\_