

(GI-5+7, GI-6, GI-8, GI-9, SI-2+4, SI-3 & VI-2)

DATE: 25.09.2019

MAXIMUM MARKS :100

TIMING: 3¼ Hours

PAPER: FM + ECO

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) 1. Calculation of Cost of Sales

Fixed Assets turnover ratio

$$\frac{\text{Cost of Sales}}{\text{Fixed Assets}} = 2$$

$$\frac{\text{Cost of Sales}}{\text{Rs. 10,50,000}} = 2$$

$$\text{Cost of Sales} = 2 \times 10,50,000 = \text{Rs. 21,00,000} \quad \left. \vphantom{\frac{\text{Cost of Sales}}{\text{Rs. 10,50,000}}} \right\} \{1/2 \text{ M}\}$$

2. Calculation of value of finished goods

Inventory turnover ratio

$$\frac{\text{Cost of Sales}}{\text{Finished goods}} = 6$$

$$\frac{\text{Rs. 21,00,000}}{\text{Finished goods}} = 6$$

$$6 \times \text{Finished goods} = 21,00,000$$

$$\text{Finished goods} = 21,00,000/6 = \text{Rs. 3,50,000} \quad \left. \vphantom{6 \times \text{Finished goods}} \right\} \{1/2 \text{ M}\}$$

3. Calculation of Sales and Gross Profit

Gross Profit Ratio

$$\frac{\text{Gross Profit}}{\text{Sales}} \times 100 = 25\%$$

If Cost of Sales i.e., Rs. 21,00,000 is 75%

$$\text{Sales value would be } 100\% = 21,00,000 \times 100/75 = \text{Rs. 28,00,000} \quad \left. \vphantom{21,00,000 \times 100/75} \right\} \{1/2 \text{ M}\}$$

$$\text{Gross Profit} = \text{Rs. 28,00,000} - \text{Rs. 21,00,000} = \text{Rs. 7,00,000} \quad \left. \vphantom{\text{Rs. 28,00,000} - \text{Rs. 21,00,000}} \right\} \{1/2 \text{ M}\}$$

4. Calculation of Net Profit = 28,00,000 x 8/100 = Rs. 2,24,000 } {1/2 M}

5. Calculation of Interest charges

$$\frac{\text{Net Profit before Interest}}{\text{Interest}} = 8$$

$$\frac{2,24,000}{\text{Interest}} = 8$$

$$8 \times \text{Interest} = 2,24,000$$

$$\text{Interest} = 2,24,000/8 = \text{Rs. 28,000} \quad \left. \vphantom{2,24,000/8} \right\} \{1/2 \text{ M}\}$$

6. **Calculation of value of 7% Debentures**
 Interest on Debentures @ 7% = Rs. 28,000
 Debentures = 28,000 x 100/7 = Rs. 4,00,000 } {1/2 M}
7. **Calculation of Debtors**
 Debt collection period = 1.5 times
 $\frac{\text{Debtors}}{\text{Rs. 28,00,000}} \times 12 = 1.5$
 12 x Debtors = 1.5 x 28,00,000
 Debtors = 42,00,000/12 = Rs. 3,50,000 } {1/2 M}
8. **Calculation of Material Consumption**
 Material Consumption = 30% of Sales = 28,00,000 x 30/100 = Rs. 8,40,000 } {1/2 M}
9. **Raw Material Stock**
 Raw Material Stock = 3 months of material consumption
 = 8,40,000 x 3/12 = Rs. 2,10,000 } {1/2 M}
10. **Calculation of Current Assets and Current Liabilities**
 $\frac{\text{Current Assets}}{\text{Current Liabilities}} = 2.4 \text{ times}$
 $\frac{\text{Liquid Assets}}{\text{Current Liabilities}} = 1 \text{ times}$
 Value of Stock = 2.4 - 1.0 = 1.4 times
 Value of Stock = Finished Goods + Raw Material
 = 3,50,000 + 2,10,000
 = Rs. 5,60,000
 1.4
 If 1.4 time is 5,60,000, then 1 time =
 $\frac{1}{1.4} \times 5,60,000 = \text{Rs. 4,00,000}$
 Current Liabilities = Rs. 4,00,000 } {1/2 M}
 Current Assets = Rs. 9,60,000 } {1/2 M}
 (4,00,000 x 2.4)
11. **Calculation of Cash**
 Current Assets – Stock of Finished Goods, Raw Materials and Debtors
 Rs. 9,60,000 – (3,50,000 + 2,10,000 + 3,50,000) = Rs. 50,000 } {1/2 M}
12. **Calculation of Capital Reserve**
 Ratio of Reserves to Capital = 0.21
- | | |
|---------------|------|
| If Capital is | 1.00 |
| Reserve | 0.21 |
| Net Worth | 1.21 |
- Net worth = Rs. 12,10,000
 Capital = 12,10,000 x 100/21
 = Rs. 10,00,000 } {1/2 M}
 Reserve = Rs. 12,10,000 x 0.21/1.21
 = Rs. 2,10,000 } {1/2 M}

Liabilities	Rs.	Assets	Rs.
Share Capital	10,00,000	Fixed Assets	10,50,000
Reserve	2,10,000	Current Assets	
Debenture 7%	4,00,000	Debtors	3,50,000
Current Liabilities	4,00,000	Stock (3,50,000+2,10,000)	5,60,000
		Cash	50,000
	20,10,000		20,10,000

{1 M}

Answer:

(b) As per MM model the value of share shall be calculated as follows:

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

Where: $P_1 = \text{Rs. } 100$; $P_1 = \text{To be found}$; $D_1 = \text{Rs. } 6$; $K_e = 10\%$ or 0.10

(i) If Dividend is paid:

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

Putting the values:

$$100 = \frac{P_1 + 6}{1 + .10}$$

or

$$100 = \frac{P_1 + 6}{1.10}$$

or

$$110 = P_1 + 6$$

or

$$P_1 = 110 - 6$$

$$P_1 = \text{Rs. } 104 \quad \text{ } \} \{1 M\}$$

(ii) If Dividend is not paid:

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

Putting the values $100 = \frac{P_1 + 0}{1 + .1}$

$$110 = P_1$$

$$P_1 = 110 \quad \text{ } \} \{1 M\}$$

(iii) Calculation of No. of Shares to be issued:

Particular	Dividend declared Rs.	Dividend Not declared Rs.
Net Income	20,00,000	20,00,000
Less: Dividend paid	12,00,000	
Retained earnings	8,00,000	20,00,000
Net Investment	40,00,000	40,00,000
Amount to be raised by issued of new shares (A)	32,00,000	20,00,000
Market Price per share (B)	Rs. 104	Rs. 110
New shares to be issued (A/B) (C)	30,769.23	18181.82

Alternatively it can be calculate with the help of following equation:

$$\Delta N = \frac{I - (E - nD_1)}{P_1}$$

n = Number of shares outstanding at the beginning of the period i.e. 2,00,000 shares.

ΔN = New shares to be issued

P = Total investment required for the project i.e. Rs. 40,00,000.

E = Earnings of the firm during the period after payment of dividend.

(i) If dividend is declared Rs. 20,00,000 – Rs. 12,00,000 = Rs. 8,00,000.

(ii) If dividend is not declared Rs. 20,00,000

Now we can calculate the no. of New shares to be issued

(i) **If dividend is paid:**

$$\Delta N = \frac{40,00,000 - 8,00,000}{\text{Rs. } 104} = 30,769.23 \text{ shares } \left. \vphantom{\Delta N} \right\} \{2 \text{ M}\}$$

(ii) **If dividend is not paid:**

$$\Delta N = \frac{40,00,000 - 20,00,000}{\text{Rs. } 110} = 18,181.82 \text{ shares } \left. \vphantom{\Delta N} \right\} \{2 \text{ M}\}$$

Answer:

(c) Workings:

(i) Cost Of Equity (K_e) = $\frac{D_1}{P_0} + g = \frac{\text{Rs.}3}{\text{Rs.}30} + 0.07 = 0.1 + 0.07 = 0.17 = 17\%$ } {1 M}

(ii) Cost of Debentures (K_d) = $I(1-t) = 0.09(1-0.4) = 0.054$ or 5.4% } {1 M}

(iii) Cost of preference shares (k_p) = 12% } {1 M}

Computation of Weighted Average Cost of Capital (WACC using market value weights)

Source of capital	Market Value of capital (Rs.)	Weight	Cost of capital (%)	WACC (%)
9% Debentures	30,00,000	0.30	5.40	1.62
12% Preference Shares	10,00,000	0.10	12.00	1.20
Equity Share Capital (Rs. 30 × 2,00,000 shares)	60,00,000	0.60	17.00	10.20
Total	1,00,00,000	1.00		13.02

Answer 2:

(a) **Statement Showing Working Capital Requirements**

(A)	Current Assets:	Rs.
(1)	Stock of Raw Material (3,000 × Rs. 40 × 4) or $62,40,000 \times \frac{4}{52}$	4,80,000 } {1/2 M}
(2)	Stock of Work-in-progress (3,000 × Rs. 75 × 1 × 1/2)	1,12,500 } {1 M}

	$1,17,00,000 \times 50\% \times \frac{1}{52}$		
(3)	Stock of Finished Goods (3,000 x Rs. 75 x 2)	4,50,000	{1/2 M}
	$1,17,00,000 \times \frac{2}{52}$		
(4)	Debtors (3,000 x Rs. 75 x 4 x 75/100)	6,75,000	{1 M}
	$1,17,00,000 \times 75\% \times \frac{4}{52}$		
(5)	Cash Balance	50,000	{1/2 M}
	Total Current Assets (A)	17,67,500	
(B)	Current Liabilities:		
(1)	Creditors for Material (3,000 x Rs. 40 x 3)	3,60,000	{1/2 M}
	$62,40,000 \times \frac{3}{52}$		
(2)	Time-lag in Payment of Wages (3,000 x Rs. 20 x 2)	1,20,000	{1/2 M}
	$31,20,000 \times \frac{2}{52}$		
(3)	Time-lag in Payment of overheads (3,000 x Rs. 15 x 1)	45,000	{1/2 M}
	$23,40,000 \times \frac{1}{52}$		
	Total Current Liabilities (B)	5,25,000	
(c)	Net Working Capital Required (A – B)	12,42,500	{1 M}

- (b) Calculation of Maximum Permissible Bank Finance under the suggestions of Tandon Committee:

1st Method of Lending:

$$\begin{aligned} \text{Maximum Finance by Bank} &= 0.75 (\text{CA} - \text{CL}) \\ &= 0.75 (\text{Rs. } 17,67,500 - \text{Rs. } 5,25,000) = \text{Rs. } 9,31,875 \quad \{1 \text{ M}\} \end{aligned}$$

2nd Method of Lending:

$$\begin{aligned} \text{Maximum Finance by Bank} &= .75 (\text{CA}) - \text{CL} \\ &= \text{Rs. } (0.75 \times \text{Rs. } 17,67,500) - \text{Rs. } 5,25,000 \\ &= \text{Rs. } 13,25,625 - \text{Rs. } 5,25,000 = \text{Rs. } 8,00,625 \quad \{1 \text{ M}\} \end{aligned}$$

Working Notes:

- (1) Weekly Production = $\frac{1,56,000}{52} = 3,000$ Units.
- (2) Per unit Cash Cost of Production = Rs. 40 (Raw Materials) + Rs. 20 (Direct Labour) + Rs. 15 (Overheads excluding depreciation) = Rs. 75 per unit.
- (3) Depreciation is a Non-Cash expense which does not require working capital hence it has not been included.
- (4) Debtors has been valued on the Cash Cost of Goods Sold.
- (5) The profit has not been treated as source of working capital.

Cost Sheet

	Rs.
Raw Material (1,56,000 x 40)	62,40,000
Add: Direct Labour (1,56,000 x 20)	31,20,000
Prime cost	93,60,000
Add: Factory overhead (1,56,000 x 15)	23,40,000
Cost of Production	1,17,00,000

Answer 3:(i) **Financial leverage**

Combined Leverage = Operating Leverage (OL) x Financial Leverage (FL)

$$2.8 = 1.4 \times \text{FL} \quad \text{Or, FL} = 2$$

$$\text{Financial Leverage} = 2 \quad \text{ } \} \{2 \text{ M}\}$$

(ii) P/V Ratio and EPS

$$\text{Operating Leverage} = \frac{\text{Contribution (C)}}{\text{C} - \text{Fixed Cost (FC)}} \times 100$$

$$1.4 = \frac{C}{C - 2,04,000} \quad \text{Or, } 1.4(C - 2,04,000) = C$$

$$\text{Or, } 1.4C = 2,85,600 = C \quad \text{Or, } C \frac{\text{Rs. } 2,85,600}{0.4} = C = 7,14,000$$

$$\text{Now, P/V ratio} = \frac{\text{Contribution (C)}}{\text{Sales (S)}} \times 100 = \frac{\text{Rs. } 7,14,000}{\text{Rs. } 30,00,000} \times 100 = 23.8\% \quad \text{ } \} \{2 \text{ M}\}$$

Therefore, P/V Ratio = 23.8%

$$\text{EPS} = \frac{\text{Profit after tax}}{\text{No. of equity share}}$$

$$\text{EBT} = \text{Sales} - \text{V} - \text{FC} - \text{Interest}$$

$$= \text{Rs. } 30,00,000 - \text{Rs. } 22,86,000 - \text{Rs. } 2,04,000 - \text{Rs. } 2,55,000$$

$$= \text{Rs. } 2,55,000$$

$$\text{PAT} = \text{EBT} - \text{Tax}$$

$$= \text{Rs. } 2,55,000 - \text{Rs. } 76,500 = \text{Rs. } 1,78,500$$

$$\text{EPS} = \frac{\text{Rs. } 1,78,500}{\text{Rs. } 1,70,000} = 1.05 \quad \text{ } \} \{2 \text{ M}\}$$

(iii) Assets turnover

$$\text{Assets turnover} = \frac{\text{Sales}}{\text{Total Assets}} = \frac{\text{Rs. } 30,00,000}{\text{Rs. } 38,25,000} = 0.784 \quad \text{ } \} \{2 \text{ M}\}$$

0.784 < 1.5 means lower than industry turnover.

Answer 4:

Working Notes

$$\text{Depreciation on Machine X} = \frac{1,50,000}{5} = \text{Rs. } 30,000$$

$$\text{Depreciation on Machine Y} = \frac{2,40,000}{6} = \text{Rs. } 40,000$$

Particulars	Machine X (Rs.)	Machine Y (Rs.)
Annual Savings:		
Wages	90,000	1,20,000
Wastage	10,000	15,000
Total Saving (A)	1,00,000	1,35,000
Annual Estimated Cash Cost		
Indirect Estimated	6,000	8,000
Supervision	12,000	16,000
Maintenance	7,000	11,000
Total Cash Cost (B)	25,000	35,000
Annual Cash Saving (A – B)	75,000	1,00,000
Less: Depreciation	30,000	40,000
Annual Saving Before Tax	45,000	60,000
Less: Tax @ 30%	13,500	18,000
Annual Savings/Profit (After Tax)	31,500	42,000
Add: Depreciation	30,000	40,000
Annual Cash Inflows	{1 M} 61,500	{1 M} 82,000

Evaluation of Alternatives

(i) **Average Rate of Return Method (ARR)**

$$ARR = \frac{\text{Average Annual Net Savings}}{\text{Average Investment}}$$

$$\text{Machine X} = \frac{31,500}{75,000} \times 100 = 42\% \quad \left. \vphantom{\frac{31,500}{75,000}} \right\} \{1 M\}$$

$$\text{Machine Y} = \frac{42,000}{1,20,000} \times 100 = 35\% \quad \left. \vphantom{\frac{42,000}{1,20,000}} \right\} \{1 M\}$$

Decision : Machine X is better. }{1/2 M}

[Note: ARR can be computed alternatively taking initial investment as the basis for computation (ARR = Average Annual Net Income/Initial Investment). The value of ARR for Machines X and Y would then change accordingly as 21% and 17.5% respectively]

(ii) **Profitability Index Method**

Present Value of Cash Inflow
Machine X = Annual Cash Inflow x P.V. Factor @ 10%
= 61,500 x 3.79
= Rs. 2,33,085

Machine Y = 82,000 x 4.355
= Rs. 3,57,110

$$\text{Profitability Index} = \frac{\text{Present Value of Cash inflow}}{\text{Investment}}$$

$$\text{Machine X} = \frac{2,33,085}{1,50,000} = 1.5539 \quad \left. \vphantom{\frac{2,33,085}{1,50,000}} \right\} \{1 M\}$$

$$\text{Machine Y} = \frac{3,57,110}{2,40,000} = 1.488 \quad \left. \vphantom{\frac{3,57,110}{2,40,000}} \right\} \{1 M\}$$

Decision : Machine X is better. }{1/2 M}

(iii) NPV = Present Value of Cash inflow - Present Value of Cash out flow

Machinery X = 2,33,085 - 1,50,000 = 83,085 {1 M}
 Machinery Y = 3,57,110 - 2,40,000 = 1,17,110 {1 M}
 Decision : For decision, we shall calculate EANPV = NPV / AVF
 Machinery X = 83085/3.79 = 21922
 Machinery Y = 117110/4.355 = 26891 } {1 M}
 Machine Y is better as its EANPV is greater.

Answer 5:

(i) Statement showing computation of expected net present value of Projects A and B:

Project A			Project B		
NPV Estimate (Rs.)	Probability	Expected Value	NPV Estimate	Probability	Expected Value
15,000	0.2	3,000	15,000	0.1	1,500
12,000	0.3	3,600	12,000	0.4	4,800
6,000	0.3	1,800	6,000	0.4	2,400
3,000	0.2	600	3,000	0.1	300
	1.0	EV = 9,000	{1 M}	1.0	EV = 9,000

(ii) Computation of Standard deviation of each project

Project A

P	X	(X - EV)	P (X - EV) ²
0.2	15,000	6,000	72,00,000
0.3	12,000	3,000	27,00,000
0.3	6,000	- 3,000	27,00,000
0.2	3,000	- 6,000	72,00,000
			Variance = 1,98,00,000

Standard Deviation of Project A = $\sqrt{1,98,00,000} = \text{Rs.}4,450$ {2 M}

Project B

P	X	(X - EV)	P (X - EV) ²
0.1	15,000	6,000	36,00,000
0.4	12,000	3,000	36,00,000
0.4	6,000	- 3,000	36,00,000
0.1	3,000	- 6,000	36,00,000
			Variance = 1,44,00,000

Standard Deviation of Project B = $\sqrt{1,44,00,000} = \text{Rs.}3,795$ {2 M}

(iii) Computation of profitability index of each project

Profitability index = Discount cash inflow / Initial outlay

In case of Project A: $PI = \frac{9,000 + 36,000}{36,000} = \frac{45,000}{36,000} = 1.25$ {1 M}

In case of Project B: $PI = \frac{9,000 + 30,000}{30,000} = \frac{39,000}{30,000} = 1.30$ {1 M}

- (iv) Measurement of risk is made by the possible variation of outcomes around the expected value and the decision will be taken in view of the variation in the expected value where two projects have the same expected value, the decision will be the project which has smaller variation in expected value. In the selection of one of the two projects A and B, Project B is preferable because the possible profit which may occur is subject to less variation (or dispersion). Much higher risk is lying with project A. {2 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.
- (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.
- (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. {1.5 M Each}
- (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.

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. {1/2 M Each for any 4 }
- (iv) **Preservation of Debt Capacity:** As, 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 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 M}
- Wealth = Present Value of benefits – Present Value of Costs**

OR

Answer:

- (c) **Main reasons for considering risk in capital budgeting decisions:** } {2 M}
- Main reasons for considering risk in capital budgeting decisions are as follows
- (i) There is an opportunity cost involved while investing in a project for the level of risk. Adjustment of risk is necessary to help make the decision as to whether the returns out of the project are proportionate with the risks borne and whether it is worth investing in the project over the other investment options available.
- (ii) Risk adjustment is required to know the real value of the Cash Inflows.

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 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 7:

- (a) Gross National Disposable Income (GNDI)= GNPMP + Net current transfer received from rest of the world. Net current transfer received from rest of the world is the difference between the current transfer received from rest of the world and current transfers paid to rest of the world. Current transfers from government are not included as they are simply transfers within the economy. } {2 M}
- Gross National Disposable Income = (National Consumption Expenditure) + (Gross National Saving)
- = (Government final consumption expenditure+ Private final consumption expenditure) + (Gross National Saving.)
- Calculation: -**
- = NDP at factor cost + Consumption of fixed capital = GDP at factor cost GDP at factor cost + Net factor income to abroad = GNP at factor cost GNP at factor cost + (indirect taxes – subsidies) = GNP at market prices GNP at market prices + Net current transfers from rest of the world } {3 M}
- = Gross National Disposable income
- = (6000+400) + (- 300) + (700-600) + 500
- = 6400 - 300 + 100 + 500 = 6700 Crores

Answer:

- (b) A nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller (this is the commodity of its comparative advantage) and import the commodity in which it's absolute disadvantage is greater (this is the commodity of its comparative disadvantage). } {3 M}

Answer:

(c) Trade is distorted if quantities of commodities produced, bought, and sold and their prices are higher or lower than levels that would usually exist in a competitive market. {1 M}

For example, barriers to imports such as tariffs, domestic subsidies and quantitative restrictions can make agricultural products more costly in a market of a country. The higher prices will result in higher production of crop. Then export subsidies are needed to sell the surplus output in the world markets, where prices are low. Thus, the subsidising countries can be producing and exporting considerably more than what they normally would. {1 M}

Answer 8:

- (a) The market outcomes of different situations are given below;
- (i) Negative consumption externality; social cost not accounted for; market failure; overproduction
 - (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. {Each 1 Mark}
 - (iii) Negative consumption externality; overproduction.
 - (iv) Public good, merit good; positive consumption externality; under production; scope for government intervention.
 - (v) Negative externality; social cost not accounted for; overproduction.

Answer:

(b) Baumol (1952) and Tobin (1956) developed a deterministic theory of transaction demand for money, known as Inventory Theoretic Approach, in which money was essentially viewed as an inventory held for transaction purposes. Inventory models assume that there are two media for storing value: money and an interest-bearing alternative asset. Baumol’s propositions in his theory of transaction demand for money hold that receipt of income, say Y takes place once per unit of time but expenditure is spread at a constant rate over the entire period of time. There is an opportunity cost of holding money: the interest forgone on an interest-bearing asset such as a bond. In order to maximize interest earnings, a person would like to hold as much of his wealth as possible in the form of bonds, while still being able to finance the flow of monetary expenditures. If there is no cost to doing so, he would keep all of his wealth in the form of “bond” and hold zero money balances. However, making these transfers generally incurs some kind of cost, either explicitly through a transaction fee or implicitly through the time and inconvenience of making the transfer. {1 M}

The level of inventory holding depends upon the carrying cost, which is the interest forgone by holding money and not bonds, net of the cost to the individual of making a transfer between money and bonds, say for example brokerage fee. If an individual, say X, decided to invest in bonds. If r is the return on bond holding; c is the cost of each transaction in the bond market; (i.e. for converting it to liquid cash) and n is the number of bond transactions, then the net profit for the individual would be {1 M}

$$R - (n c)$$

Where R is the interest earning on the average bond holding which is equal to r times average bond holdings and nc the transaction costs which equal the cost of each transaction multiplied by the number of bond transactions.

Therefore, for a given income, the choice of the split of total money into money and bond holdings is determined by the choice of n . The individual will choose n in such a way that the net profits from bond transactions are maximized. The Baumol-Tobin model derives the optimal frequency of bond-money transactions that minimizes the

sum of the two components of cost: the forgone interest cost (which rises as average money balances increase) and the transaction cost (which falls as fewer transactions are made or more money is held).

The individual will apply the marginalist principle and will increase the number of transactions in the bond market until the point at which the marginal interest earnings from one additional transaction just equals the constant marginal cost, which will be equal to the brokerage fee etc. Beyond this point, the marginal gain in interest earned from increasing the number of bond market transactions is not sufficient to cover the brokerage cost of the transaction. To sum up, the choice of n determines the split of money and bond holdings for a given income.

The optimal average money holding is:

- (i) a positive function of income Y ,
- (ii) a positive function of the price level P ,
- (iii) a positive function of transactions costs c , and
- (iv) a negative function of the nominal interest rate I

{1 M}

Answer:

(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. 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 to the cash reserve ratio. Higher the CRR, lower will be the credit creation and vice versa.

{1 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 9:

(a) 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). 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.

{2 M}

{1 M}

Answer:

(b) **Product taxes:** like excise duties, customs, sales tax, service tax etc., are levied by the government on goods and services and are generally related to the quantum of production.

{1 M}

Taxes on production: such as, factory license fee, taxes to be paid to the local authorities, pollution tax etc., on the other hand, are unrelated to the quantum of production.

{1 M}

Answer:

- (c) The greater will be propensity to import, the lower will be autonomous expenditure multiplier. } {2 M}

Answer:

- (d) Private cost is the cost faced by the producer or consumer directly involved in a transaction. If we take the case of a producer, his private cost includes direct cost of labour, materials, energy and other indirect overheads. These are usually added up to determine market price. The actions of consumers or producers result in costs or benefits to others and the relevant costs and benefits are not reflected as part of market prices. In other words, market prices do not incorporate externalities. Social costs refer to the total costs to the society on account of a production or consumption activity. Social costs are private costs borne by individuals directly involved in a transaction together with the external costs borne by third parties not directly involved in the transaction. Social costs represent the true burdens carried by society in monetary and non-monetary terms. } {2 M}
- } {1 M}

Answer 10:

- (a) A variety of allocation instruments are available by which governments can influence resource allocation in the economy. They are -
- i. Government may directly produce the economic good (for example, electricity and public transportation services) }
 - ii. Government may influence private allocation through incentives and disincentives (for example, tax concessions and subsidies may be given for the production of goods that promote social welfare and higher taxes may be imposed on goods such as cigarettes and alcohol) } {1 M}
 - iii. Government may influence allocation through its competition policies, merger policies etc. Which will affect the structure of industry and commerce (for example, the competition act in India promotes competition and prevents anti-competitive activities). } {1 M}
 - iv. Governments’ regulatory activities such as licensing, controls, minimum wages, and directives on location of industry influence resource allocation. }
 - v. Government sets legal and administrative frameworks, and }
 - vi. Any of a mixture of intermediate techniques may be adopted by governments. } {1 M}

Answer:

- (b) (i) Yes, cable television is an example of impure public good. Impure public goods only partially satisfy two characteristics of public goods namely, non-rivalry in consumption and non-excludability. } {1 M}
- Cable television is non-rivalrous because the use of cable television by other individuals will in no way reduce your enjoyment of it. The good is excludable since the cable TV service providers can refuse connection if you do not pay for set top box and recharge it regularly. } {2 M}
- (ii) Demerits goods are those goods which are believed to be socially undesirable. The consumption of these goods imposes significant negative externalities on the society as a whole. } {1 M}
- No. The production of steel is not essentially a demerit good. Though it causes pollution and have negative externalities, it is not a socially undesirable good. } {1 M}

Answer:

- (c) The money multiplier approach to money supply considers the ratio of deposit to reserve, $e = \{ER/D\}$ which represent the behaviour of commercial banks as one of the determinants of money supply. The commercial banks are required to keep only a part or fraction of their total deposits in the form of cash reserves. For the commercial banking system as a whole, the actual reserves ratio may be greater than the required reserve ratio since the banks keep with them a higher than the statutorily required percentage of their deposits in the form of cash reserves. The additional units of high- powered money that goes into 'excess reserves' of the commercial banks do not lead to any additional loans, and therefore, these excess reserves do not lead to creation of money. Therefore, if the central bank injects money into the banking system and these are held as excess reserves by the banking system, there will be no effect on deposits or currency and hence no effect on money multiplier and therefore on money supply. {1 M}

Answer 11:

- (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. {1 M}
- 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.

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. There are four major reasons for market failure. They are: market power, externalities, public goods, and incomplete information. {1 M}
- (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.
 - (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. {Each point
1/2
Mark}
 - (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. {1 M}
- 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.
- $$\text{MoneyMultiplier}(m) = \frac{\text{MoneySupply}}{\text{MonetaryBase}}$$
- 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. {1 M}
- 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.
