

**(GI-1, GI-2, VI-VDI-SI-1,2)**

DATE: 17.08.2022

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) Total Assets = Rs. 20 crores  
 Total Asset Turnover Ratio = 2.5  
 Hence, Total Sales =  $20 \times 2.5 = \text{Rs. } 50 \text{ crores}$

**Computation of Profit after Tax (PAT)**

	(Rs. in crores)
Sales	50.00
Less: Variable Operating Cost @ 65%	32.50
Contribution	17.50
Less: Fixed Cost (other than Interest)	4.00
EBIT	13.50
Less: Interest on Debentures (15% × 10)	1.50
PBT	12.00
Less: Tax @ 30%	3.60
PAT	8.40

- (i) Earnings per Share

$$\text{EPS} = \frac{5.40 \text{ crores}}{\text{Number of Equity Shares}} = \frac{8.40 \text{ crores}}{50,00,000} = \text{Rs. } 16.80$$

It indicates the amount the company earns per share. Investors use this as a guide while valuing the share and making investment decisions. It is also a indicator used in comparing firms within an industry or industry segment.

**2 M**

- (ii) Operating Leverage

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{17.50}{12.00} = 1.296$$

It indicates the choice of technology and fixed cost in cost structure. It is level specific. When firm operates beyond operating break-even level, then operating leverage is low. It indicates sensitivity of earnings before interest and tax (EBIT) to change in sales at a particular level.

**1 M**

- (iii) Financial Leverage

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{PBT}} = \frac{13.50}{12.00} = 1.125$$

The financial leverage is very comfortable since the debt service obligation is small vis-à-vis EBIT.

**1 M**

(iv) Combined Leverage

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{PBT}}$$

Or,  $\qquad = \text{Operating Leverage} \times \text{Financial Leverage}$   
 $\qquad = 1.296 \times 1.125 = 1.458$

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. The leverages – operating, financial and combined are measures of risk.

1 M

**Answer:**

(b)  $\frac{\text{Long-term debt}}{\text{Net worth}} = 0.5 = \frac{\text{Long-term debt}}{2,00,000}$  } 1 M

Long-term debt = Rs. 1,00,000

Total liabilities and net worth = Rs. 4,00,000

Total assets = Rs. 4,00,000

$$\frac{\text{Sales}}{\text{Total assets}} = 2.5 = \frac{\text{Sales}}{4,00,000} = \text{Sales} = \text{Rs. } 10,00,000$$

Cost of goods sold = (0.9) (Rs. 10,00,000) = Rs. 9,00,000.

$$\frac{\text{Cost of goods sold}}{\text{Inventory}} = \frac{9,00,000}{\text{Inventory}} = 9 = \text{Inventory} = \text{Rs. } 1,00,000$$

1 M

$$\frac{\text{Receivables} \times 360}{10,00,000} = 18 \text{ days}$$
 } 1 M

Receivables = Rs. 50,000

$$\frac{\text{Cash} + 50,000}{1,00,000} = 1$$
 } 1 M

Cash = Rs. 50,000

Plant and equipment = Rs. 2,00,000. } 1/2 M

**Balance Sheet**

	Rs.		Rs.
Cash	50,000	Notes and payables	1,00,000
Accounts receivable	50,000	Long-term debt } 1/2 M	1,00,000
Inventory	1,00,000	Common stock	1,00,000
Plant and equipment	2,00,000	Retained earnings	1,00,000
Total assets	4,00,000	Total liabilities and equity	4,00,000

Answer:

(c)

(i) Statement showing value of the firm

	(₹)
Net operating income/EBIT	5,00,000
Less: Interest on debentures (10% of ₹ 15,00,000)	(1,50,000)
Earnings available for equity holders	3,50,000
Total cost of capital ( $K_0$ ) (given)	15%
Value of the firm $V = \frac{EBIT}{K_0} = \frac{5,00,000}{0.15}$	33,33,333

} 2½ M

(ii) Calculation of cost of equity

	(₹)
Market value of debt (D)	15,00,000
Market value of equity (s) $S = V - D = ₹33,33,333 - ₹15,00,000$	18,33,333

$$K_e = \frac{\text{Earnings available for equity holders}}{\text{Value of equity (S)}}$$

$$\text{Or, } = \frac{EBIT - \text{Interest paid on debt}}{\text{Market value of equity}} = \frac{₹ 3,50,000}{₹ 18,33,333} = 19.09\%$$

OR

$$K_0 = K_e \left( \frac{S}{V} \right) + K_d \left( \frac{D}{V} \right)$$

$$K_0 = K_e \left( \frac{V}{S} \right) - K_d \left( \frac{D}{S} \right)$$

$$= 0.15 \left( \frac{33,33,333}{18,33,333} \right) - 0.10 \left( \frac{15,00,000}{18,33,333} \right)$$

$$= \frac{1}{18,33,333} [(0.15 \times 33,33,333) - 0 (0.10 \times 15,00,000)]$$

$$= \frac{1}{18,33,333} [5,00,000 - 1,50,000] = 19.09\%$$

} 2½ M

Answer:

(d) (i) Computation of Earnings per share (EPS)

Plants	A	B	C
Earnings before interest and tax (EBIT)	80,000	80,000	80,000
Less: Interest charges	---	(8,000) (8% × Rs.1 lakh)	----
Earnings before tax (EBT)	80,000	72,000	80,000
Less: Tax (@ 50%)	(40,000)	(36,000)	(40,000)
Earnings after tax (EAT)	40,000	36,000	40,000

Less: Preference Dividend	---	---	(8,000) (8% × Rs.1 lakh)
Earnings available for Equity shareholders (A)	40,000	36,000	32,000
No. of Equity shares (B)	10,000 (Rs.2 lakh ÷ Rs. 20)	5,000 (Rs. 1 lakh ÷ Rs. 20)	5,000 (Rs.1 lakh ÷ Rs. 20)
EPS Rs. [(A) ÷ (B)]	4 } <b>½ M</b>	7.20 } <b>½ M</b>	6.40 } <b>½ M</b>

**(ii) Calculation of Financial Break-even point**

Financial break-even point is the earnings which are equal to the fixed finance charges and preference dividend.

Plan A : Under this plan there is no interest or preference dividend payment hence, the Financial Break-even point will be zero. } **½ M**

Plan B : Under this plan there is an interest payment of Rs. 8,000 and no preference dividend, hence, the Financial Break-even point will be Rs. 8,000 (Interest charges). } **½ M**

Plan C : Under this plan there is no interest payment but an after tax preference dividend of Rs. 8,000 is paid. Hence, the Financial Break-even point will be before tax earnings of Rs. 16,000 (i.e. Rs. 8,000 ÷ 0.5 = Rs. 16,000.) } **½ M**

**(iii) Computation of indifference point between the plans.** The indifference between two alternative methods of financing is calculated by applying the following formula.

$$\frac{(EBIT - I_1)(1 - T)}{E_1} = \frac{(EBIT - I_2)(1 - T)}{E_2}$$

Where,

- EBIT = Earnings before interest and tax.
- I<sub>1</sub> = Fixed charges (interest or pref. dividend) under Alternative 1
- I<sub>2</sub> = Fixed charges (interest or pref. dividend) under Alternative 2
- T = Tax rate
- E<sub>1</sub> = No. of equity shares in Alternative 1
- E<sub>2</sub> = No. of equity shares in Alternative 2

Now, we can calculate indifference point between different plans of financing.

I. Indifference point where EBIT of Plan A and Plan B is equal.

$$\frac{(EBIT - 0)(1 - 0.5)}{10,000} = \frac{(EBIT - 8,000)(1 - 0.5)}{5,000}$$

0.5 EBIT (5,000) = (0.5 EBIT - 4,000) (10,000)

0.5 EBIT = EBIT - 8,000

0.5 EBIT = 8,000

EBIT = Rs. 16,000

**} ½ M**

II. Indifference point where EBIT of Plan A and Plan C is equal.

$$\frac{(EBIT - 0)(1 - 0.5)}{10,000} = \frac{(EBIT - 0)(1 - 0.5) - 8,000}{5,000}$$

$$\frac{0.5 \text{ EBIT}}{10,000} = \frac{0.5 \text{ EBIT} - 8,000}{5,000}$$

$$0.25 \text{ EBIT} = 0.5 \text{ EBIT} - 8,000$$

$$0.25 \text{ EBIT} = 8,000$$

$$\text{EBIT} = \text{Rs. } 32,000$$

} 1/2 M

III. Indifference point where EBIT of Plan B and Plan C are equal.

$$\frac{(EBIT - 8,000)(1 - 0.5)}{5,000} = \frac{(EBIT - 0)(1 - 0.5) - 8,000}{5,000}$$

$$0.5 \text{ EBIT} - 4,000 = 0.5 \text{ EBIT} - 8,000$$

} 1/2 M

There is no indifference point between the financial plans B and C. It can be seen that Financial Plan B dominates Plan C. Since, the financial break even point of the former is only Rs. 8,000 but in case of latter it is Rs. 16,000. } 1/2 M

**Answer 2:**

(a) Statement showing the determination of the risk adjusted net presentvalue

Projects	Net cash outlays	Co-efficient of variation	Risk adjusted discount rate	Annual cash inflow	PVfactor 1-5years	Dis-counted cash inflow	Net present value
	(Rs.)			(Rs.)		(Rs.)	(Rs.)
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii) = (v) × (vi)	(viii) = (vii) - (ii)
X	2,10,000	1.20	16%	70,000	3.274	2,29,180	19,180
Y	1,20,000	0.80	{1 M} 14%	42,000	{1 M} 3.433	1,44,186	24,186
Z	1,00,000	0.40	12%	30,000	3.605	1,08,150	8,150

} {1 M}

**Answer:**

(b) (a) Cash cycle = 45 days + 75 days - 30 days = 90 days (3 months) } {1/2 M}  
 Cash turnover = 12 months (360 days)/3 months (90 days) = 4. } {1/2 M}

(b) Minimum operating cash = Total operating annual outlay/cash turnover, that is, Rs. 120 lakhs/4 = Rs. 30 lakhs. } {1 M}

(c) Cash cycle = 45 days + 45 days - 30 days = 60 days (2 months). } {1/2 M}  
 Cash turnover = 12 months (360 days)/2 months (60 days) = 6. } {1/2 M}  
 Minimum operating cash = Rs. 120 lakhs/6 = Rs. 20 lakhs. } {1 M}  
 Reduction in investments = Rs. 30 lakhs - Rs. 20 lakhs = Rs. 10 lakhs.  
 Savings = 0.10 × Rs. 10 lakhs = Rs. 1 lakh. } {1 M}

Answer 3:

Calculation of Net Working Capital requirement:

	(₹)	(₹)	
<b>A. Current Assets:</b>			
<b>Inventories:</b>			
- Raw material stock (Refer to Working note 3)	6,64,615		} 1 M
- Work in progress stock (Refer to Working note 2)	5,00,000		} 1½ M
- Finished goods stock (Refer to Working note 4)	13,60,000		} 1 M
Receivables (Debtors) (Refer to Working note 5)	25,10,769		} 1½ M
Cash and Bank balance	25,000		
Gross Working Capital	50,60,384	50,60,384	} ½ M
<b>B. Current Liabilities:</b>			
Creditors for raw materials (Refer to Working note 6)	7,15,740		} 1 M
Creditors for wages (Refer to Working note 7)	91,731		} 1 M
	8,07,471	8,07,471	} ½ M
Net Working Capital (A - B)		42,52,913	} ½ M

Working Notes:

## 1. Annual cost of production

	(₹)	
Raw material requirements $\{(1,04,000 \text{ units} \times ₹ 80) + ₹ 3,20,000\}$	86,40,000	
Direct wages $\{(1,04,000 \text{ units} \times ₹ 30) + ₹ 60,000\}$	31,80,000	
Overheads (exclusive of depreciation) $\{(1,04,000 \times ₹ 60) + ₹ 1,20,000\}$	63,60,000	
Gross Factory Cost	1,81,80,000	} ½ M
Less: Closing W.I.P	(5,00,000)	
Cost of Goods Produced	1,76,80,000	
Less: Closing Stock of Finished Goods $(₹ 1,76,80,000 \times 8,000/1,04,000)$	(13,60,000)	
Total Cash Cost of Sales	1,63,20,000	

## 2. Work in progress stock

	(₹)
Raw material requirements $(4,000 \text{ units} \times ₹ 80)$	3,20,000
Direct wages $(50\% \times 4,000 \text{ units} \times ₹ 30)$	60,000
Overheads $(50\% \times 4,000 \text{ units} \times ₹ 60)$	1,20,000
	5,00,000

**3. Raw material stock**

It is given that raw material in stock is average 4 weeks consumption. Since, the company is newly formed, the raw material requirement for production and work in progress will be issued and consumed during the year.

Hence, the raw material consumption for the year (52 weeks) is as follows:

	(₹)
For Finished goods (1,04,000 × ₹ 80)	83,20,000
For Work in progress (4,000 × ₹ 80)	3,20,000
	<b>86,40,000</b>

1/2 M

**Ram material stock**  $\frac{\text{Rs. } 86,40,000}{52 \text{ weeks}} \times 4 \text{ weeks}$  i.e. Rs. 6,64,615

**4. Finished goods stock:** 8,000 units@ Rs. 170 per unit = 13,60,000

**5. Debtors for sale:**  $1,63,20,000 \times \frac{8}{52} = \text{Rs. } 25,10,769$

**6. Creditors for raw material:**

Material Consumed (Rs. 83,20,000 + Rs. 3,20,000) Rs. 86,40,000

Add: Closing Stock of raw material Rs. 6,64,615

Rs. 93,04,615

1/2 M

Credit allowed by suppliers =  $\frac{\text{Rs. } 93,04,615}{52 \text{ weeks}} \times 4 \text{ weeks} = \text{Rs. } 7,15,740$

**7. Creditors for wages**

Outstanding wage payment =  $\frac{\text{Rs. } 31,80,000}{52 \text{ weeks}} \times 1.5 \text{ weeks} = \text{Rs. } 91,731$

**Answer: 4**

**Working notes**

**1 Computation of Net Present Values of Projects**

Year	Cash flows		Disct. factor @ 16 %	Discounted Cash flow	
	Project A (₹)	Project B (₹)		Project A (₹)	Project B (₹)
	(1)	(2)	(3)	(3) × (1)	(3) × (2)
0	(1,35,000)	(2,40,000)	1.000	(1,35,000)	(2,40,000)
1	–	60,000	0.862	–	51,720
2	30,000	84,000	0.743	22,290	62,412
3	1,32,000	96,000	0.641	84,612	61,536
4	84,000	1,02,000	0.552	46,368	56,304
5	84,000	90,000	0.476	39,984	42,840
	Net present value			58,254	34,812

1 M

## 2 Computation of Cumulative Present Values of Projects Cash inflows

Year	Project A		Project B	
	PV of cash inflows (₹)	Cumulative PV (₹)	PV of cash inflows (₹)	Cumulative PV (₹)
1	--	--	51,720	51,720
2	22,290	22,290	62,412	1,14,132
3	84,612	1,06,902	61,536	1,75,668
4	46,368	1,53,270	56,304	2,31,972
5	39,984	1,93,254	42,840	2,74,812

1 M

## (i) Discounted payback period : (Refer to Working note 2)

Cost of Project A = Rs. 1,35,000

Cost of Project B = Rs. 2,40,000

Cumulative PV of cash inflows of Project A after 4 years = Rs. 1,53,270

Cumulative PV of cash inflows of Project B after 5 years = Rs. 2,74,812

A comparison of projects cost with their cumulative PV clearly shows that the project A's cost will be recovered in less than 4 years and that of project B in less than 5 years. The exact duration of discounted payback period can be computed as follows:

	Project A	Project B
Excess PV of cash inflows over the project cost (₹)	18,270 (₹ 1,53,270 – ₹ 1,35,000)	34,812 (₹ 2,74,812 – ₹ 2,40,000)
Computation of period required to recover excess amount of cumulative PV over project cost (Refer to Working note 2)	0.39 year (₹ 18,270 ÷ ₹ 46,368)	0.81 years (₹ 34,812 ÷ ₹ 42,840)
Discounted payback period	3.61 year (4 – 0.39) years } 1½ M	4.19 years (5 – 0.81) years } 1½ M

(ii) Profitability Index(PI): 
$$= \frac{\text{Sum of discounted cash inflows}}{\text{Initian cash outlay}}$$

$$\text{Profitability Index (for Project A)} = \frac{₹ 1,93,254}{₹ 1,35,000} = 1.43 \quad \left. \vphantom{\frac{₹ 1,93,254}{₹ 1,35,000}} \right\} 1\frac{1}{2} \text{ M}$$

$$\text{Profitability Index (for Project B)} = \frac{₹ 2,74,812}{₹ 2,40,000} = 1.15 \quad \left. \vphantom{\frac{₹ 2,74,812}{₹ 2,40,000}} \right\} 1\frac{1}{2} \text{ M}$$

## (iii) Net present value(NPV) (for Project A) = ₹ 58,254 } 1 M

$$\text{Net present value(NPV) (for Project B)} = ₹ 34,812 \quad \left. \vphantom{₹ 34,812} \right\} 1 \text{ M}$$

(Refer to Working note 1)

**Conclusion:** As the NPV, PI of Project A is higher and Discounted Pay back is lower, therefore Project a should be accepted.



**Answer 5:**

(i) Statement of Weighted Average Cost of Capital

Project cost	Financing	Proportion of capital Structure	After tax cost (1-Tax 50%)	Weighted average cost (%)	
Upto ₹ 2 Lakhs	Debt	0.4	10% (1 - 0.5) = 5%	0.4 × 5 = 2.0	} 2 M
	Equity	0.6	12%	0.6 × 12 = 7.2	
				<u>9.2%</u>	
Above ₹ 2 lakhs & upto to ₹ 5 Lakhs	Debt	0.4	11% (1 - 0.5) = 5.5%	0.4 × 5.5 = 2.2	} 2 M
	Equity	0.6	13%	0.6 × 13 = 7.8	
				<u>10.0%</u>	
Above ₹ 5 lakhs & upto ₹ 10 lakhs	Debt	0.4	12% (1 - 0.5) = 6%	0.4 × 6 = 2.4	} 2 M
	Equity	0.6	14%	0.6 × 14 = 8.4	
				<u>10.8%</u>	
Above ₹ 10 lakhs & upto ₹ 20 lakhs	Debt	0.4	13% (1 - 0.5) = 6.5%	0.4 × 6.5 = 2.6	} 2 M
	Equity	0.6	14.5%	0.6 × 14.5 = 8.7	
				<u>11.3%</u>	

Project	Fund requirement	Cost of capital	
X	₹6.5 lakhs	10.8% (from the above table)	} 1 M
Y	₹14 lakhs	11.3% (from the above table)	

(ii) If a Project is expected to give after tax return of 10%, it would be acceptable provided its project cost does not exceed Rs. 5 lakhs or, after tax return should be more than or at least equal to the weighted average cost of capital } 1 M

**Answer 6:**

(a) Today, the role of chief financial officer, or CFO, is no longer confined to accounting, financial reporting and risk management. It's about being a strategic business partner of the chief executive officer, or CEO. Some of the key differences that highlight the changing role of a CFO are as follows:- } 1/2 M

What a CFO used to do?	What a CFO now does?	
Budgeting	Budgeting	} 3 1/2 M
Forecasting	Forecasting	
Accounting	Managing M&As	
Treasury (cash management)	Profitability analysis (for example, by customer or product)	
Preparing internal financial reports for management	Pricing analysis	
Preparing quarterly, annual filings for investors	Decisions about outsourcing	
Tax filing	Overseeing the IT function	
Tracking accounts payable and accounts receivable	Overseeing the HR function	
Travel and entertainment expense management	Strategic planning (sometimes overseeing this function).	
	Regulatory compliance.	

	Risk management.
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**Answer:**

- (b)** The differences between Factoring and Bills discounting are as follows:
- (i) Factoring is called as 'Invoice factoring' whereas bills discounting is known as "Invoice discounting". } **1 M**
  - (ii) In factoring the parties are known as client, factor and debtor whereas in bills discounting they are known as Drawer, Drawee and Payee. } **1 M**
  - (iii) Factoring is a sort of management of book debts whereas bills discounting is a sort of borrowing from commercial banks. } **1 M**
  - (iv) For factoring there is no specific Act; whereas in the case of bills discounting, the Negotiable Instrument Act is applicable. } **1 M**

**Answer:**

- (c)** Financial ratios provide clues but not conclusions. These are tools only in the hands of experts because there is no standard ready-made interpretation of financial ratios. As the name indicates it is the reciprocal of payback period. A major drawback of the payback period method of capital budgeting is that it does not indicate any cut off period for the purpose of investment decision. It is, however, argued that the reciprocal of the payback would be a close approximation of the Internal Rate of Return (later discussed in detail) if the life of the project is at least twice the payback period and the project generates equal amount of the annual cash inflows. In practice, the payback reciprocal is a helpful tool for quickly estimating the rate of return of a project provided its life is at least twice the payback period. } **1½ M**

The payback reciprocal can be calculated as follows:

$$\text{Payback Reciprocal} = \frac{\text{Average annual cash in flow}}{\text{Initial investment}} \quad \left. \vphantom{\frac{\text{Average annual cash in flow}}{\text{Initial investment}}} \right\} \text{ } \mathbf{1/2 M}$$

## 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) **Income Method**

NNP FC or National Income = Compensation of employees + Operating Surplus (rent + interest+ profit) + Mixed Income of Self- employed+ Net Factor Income from Abroad

= 24000 + 10,000 + 28000 + (-300)

= **Rs. 61700 Cr**

Expenditure Method:

GDP=C+I+G+(X-M)

= personal consumption expenditure (c) + gross business fixed capital + inventory management (I) + govt purchases (G) + (exports- imports)

GDPMP= 51000+7000+13000+3000+(4800-5600)

= Rs. 73200 cr

GNPmp = 73200+Net factor Income from Abroad

=Rs. 73200+(-300) = **Rs. 72900 cr**

NNPmp = Rs.72900 - 4000 = **Rs. 68900 cr**

NNPfc or National Income = Rs. 68900-7200 = **Rs. 61700 cr**

{2 M}

{3 M}

Answer:

(b) (i) There are four major reasons for market failure which are: Market power, Externalities, Public goods, and Incomplete information. Sometimes, the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price. Such costs or benefits which are not accounted for by the market price are called externalities because they are "external" to the market.

The four possible types of externalities are:

- **Negative production externalities:** A negative externality initiated in production which imposes an external cost on others may be received by another in consumption or in production. As an example, a negative production externality occurs when a factory which produces aluminum discharges untreated waste water into a nearby river and pollutes the water causing health hazards for people who use the water for drinking and bathing. Additionally, there is no market in which these external costs can be reflected in the price of aluminum.
- **Positive production externalities:** A positive production externality is received in consumption when an individual raises an attractive garden and the persons walking by enjoy the garden. These external effects were not in fact considered when the production decisions were made.
- **Negative consumption externalities:** Negative consumption externalities are extensively experienced by us in our day-to-day life. Such negative consumption externalities initiated in consumption which produce external costs on others may be received in consumption or in production

{1 M  
Each  
Any 3  
Points}

- **Positive consumption externalities:** A positive consumption externality initiated in consumption that confers external benefits on others may be received in consumption or in production. For example, if people get immunized against contagious diseases, they will confer a social benefit to others as well by preventing others from getting infected.

The presence of externalities creates a divergence between private and social costs of production. When negative production externalities exist, social costs exceed private cost because the true social cost of production would be private cost plus the cost of the damage from externalities. Negative externalities impose costs on society that extend beyond the cost of production as originally intended and borne by the producer. If producers do not take into account the externalities, there will be over- production and market failure.

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 consume.

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

Apart from being a critical driver of economic growth, foreign direct investment (FDI) is a major source of non-debt financial resource for the economic development of India. Currently, an Indian company may receive foreign direct investment either through 'automatic route' without any prior approval either of the Government or the Reserve Bank of India or through 'government route' with prior approval of the Government. The sectors in which foreign direct investment is prohibited are as follows:

- Lottery business including Government / private lottery, online lotteries, etc.
- Gambling and betting including casinos etc.
- Chit funds
- Nidhi company
- Trading in Transferable Development Rights (TDRs)
- Real Estate Business or Construction of Farmhouses
- Manufacturing of cigars, cheroots, cigarillos, and cigarettes, of tobacco or of tobacco substitutes
- Activities / sectors not open to private sector investment e.g., atomic energy and railway operations (other than permitted activities).

{1/2 M  
Each  
Any 4  
Points}

**Answer 8:**

**(a)** 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.

{1 M}

- (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. {1 M}
- (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. {1 M}
- (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. {1 M}

**Answer:**

(b) Credit Multiplier = 
$$\frac{1}{\text{Required Reserve Ratio}}$$

- (i) If commercial banks keep 100% reserves, the reserve deposit ratio is one and the value of money multiplier is one. Deposits simply substitute for the currency that is held by banks as reserves and therefore, no new money is created by banks. {1 M}
- (ii) If commercial banks do not keep reserves and lends the entire deposits, it is a case of zero required reserve ratio and credit multiplier will be infinite and therefore money creation will also be infinite. {1 M}
- (iii) Excess reserves are reserves over and above what banks are legally required to hold against deposits. The additional units of 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. The increase in banks' excess reserves reduces the credit multiplier, causing the money supply to decline. {1 M}

Answer:

(c)

Fixed Exchange Rate	Floating Exchange Rate
A fixed exchange rate, also referred to as pegged exchange rate, is an exchange rate regime under which a country's central bank and/or government announces or decrees what its currency will be worth in terms of either another country's currency or a basket of currencies or another measure of value, such as gold.	Under floating exchange rate regime, the equilibrium value of the exchange rate of a country's currency is market-determined i.e. the demand for and supply of currency relative to other currencies determine the exchange rate.
In order to maintain the exchange rate at the predetermined level, the central bank intervenes in the foreign exchange market	There is no interference on the part of the government or the central bank of the country in the determination of exchange rate. Any interference in the foreign exchange market on the part of the government or central bank would be only for moderating the rate of change

{1 M}

{1 M}

Answer 9:

- (a) (i) (1)  $MV = PT$   
 $M \times 25 = 110.5 \times 200$   
 Therefore,  $25 M = 22100$   
 Then  $M = 22100 \div 25 = 884$  bn  
 Total supply (m) = **884** bn }{1 M}
- (2)  $M \times 75 = 110.5 \times 200$   
 $M = 110.5 \times 200 \div 75 = 294.66$  bn }{1 M}  
 Hence supply of money will reduce from 884 bn to 294.66 bn
- (3)  $MV = PT$   
 $884 \times V = 110.5 \times 325$   $V = 40.62$  bn }{1 M}  
 When Volume of transaction increases to 325 bn velocity (v) will be 40.62 bn

Answer:

(a) (ii) **New Trade Theory** helps in understanding why developed and big countries trade partners are when they are trading similar goods and services. This is particularly true in key economic sectors such as electronics, IT, food, and automotive.

According to New Trade Theory, two key concepts give advantages to countries that import goods to compete with products from the home country:

- **Economies of Scale:** As a firm produces more of a product, its cost per unit keeps going down. So, if the firm serves domestic as well as foreign market instead of just one, then it can reap the benefit of large scale of production consequently the profits are likely to be higher. }{1 M}
- **Network effects** refer to the way one person's value for a good or service is affected by the value of that good or service to others. The value of the product or service is enhanced as the number of individuals using it increases. A good example will be Mobile App such as What's App and software like Microsoft Windows. }{1 M}

**Answer:**

**(b) (i)** The WTO does its functions by acting as a forum for trade negotiations among member governments, administering trade agreements, reviewing national trade policies, cooperating with other international organizations, and assisting developing countries in trade policy issues through technical assistance and training programmes. The WTO, accounting for about 95% of world trade, currently has 164 members, of which 117 are developing countries or separate customs territories.

**The WTO has six key objectives:**

- to set and enforce rules for international trade
  - to provide a forum for negotiating and monitoring further trade liberalization
  - to resolve trade disputes
  - to increase the transparency of decision-making processes
  - to cooperate with other major international economic institutions involved in global economic management, and
  - to help developing countries benefit fully from the global trading system.
- } **{1/2 M  
Each 6  
Points}**

**Answer:**

**(b) (ii)** The Liquidity Adjustment Facility (LAF) enables the RBI to modulate short-term liquidity under varied financial market conditions to ensure stable conditions in the overnight (call) money market. The LAF consists of overnight as well as term repo auctions. The aim of term repo is to help develop the inter-bank term money market. Currently, the RBI provides financial accommodation to the commercial banks through repos/reverse repos under the Liquidity Adjustment Facility (LAF).

The Marginal Standing Facility (MSF) announced by the Reserve Bank of India (RBI) in its Monetary Policy, 2011-12 refers to the facility under which scheduled commercial banks can borrow additional amount of overnight money from the central bank over and above what is available to them through the LAF window by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit ( a fixed per cent of their net demand and time liabilities deposits (NDTL) liable to change every year ) at a penal rate of interest.

The MSF would be the last resort for banks once they exhaust all borrowing options including the liquidity adjustment facility on which the rates are lower compared to the MSF.

} **{1 M}**

} **{1 M}**

**Answer 10:**

**(a)** The additional reasons for government provision of merit goods are:

- Information failure is widely prevalent with merit goods and therefore individuals may not act in their best interest because of imperfect information. } **{1 M}**
- Equity considerations demand that merit goods such as health and education should be provided free on the basis of need rather than on the basis of individual’s ability to pay. } **{1 M}**
- There is a lot of uncertainty as to the need for merit goods E.g. health care. Due to uncertainty about the nature and timing of healthcare required in future, individuals may be unable to plan their expenditure and save for their future medical requirements. The market is unlikely to provide the optimal quantity of health care when consumers actually need it, because they may be short of the necessary finances to pay the market price. } **{1 M}**

**Answer:**

**(b)** For combating the problem of market failure due to information problems and considering the importance of information in making rational choices, the following interventions are resorted to:

- Government makes it mandatory to have accurate labeling and content disclosures by producers. For example: SEBI requires that accurate information be provided to prospective buyers of new stocks.
- Public dissemination of information to improve knowledge and subsidizing of initiatives in that direction.
- Regulation of advertising and setting of advertising standards to make advertising more responsible, informative and less persuasive.

{Any 2  
Points,  
Each 1  
Mark}

**Answer:**

**(c)** 1. One of the biggest problems with using discretionary fiscal policy to counteract fluctuations is the different types of lags involved in fiscal-policy action. There are significant lags are:

- Recognition lag: The economy is a complex phenomenon and the state of the macro economic variables is usually not easily comprehensible. Just as in the case of any other policy, the government must first recognize the need for a policy change.
- Decision lag: Once the need for intervention is recognized, the government has to evaluate the possible alternative policies. Delays are likely to occur to decide on the most appropriate policy.
- Implementation lag: even when appropriate policy measures are decided on, there are possible delays in bringing in legislation and implementing them.
- Impact lag: impact lag occurs when the outcomes of a policy are not visible for some time.

2. Fiscal policy changes may at times be badly timed due to the various lags so that it is highly possible that an expansionary policy is initiated when the economy is already on a path of recovery and vice versa.

3. There are difficulties in instantaneously changing governments' spending and taxation policies.

4. It is practically difficult to reduce government spending on various items such as defence and social security as well as on huge capital projects which are already midway.

5. Public works cannot be adjusted easily along with movements of the trade cycle because many huge projects such as highways and dams have long gestation period. Besides, some urgent public projects cannot be postponed for reasons of expenditure cut to correct fluctuations caused by business cycles.

6. Due to uncertainties, there are difficulties of forecasting when a period of inflation or deflation may set in and also promptly determining the accurate policy to be undertaken.

7. There are possible conflicts between different objectives of fiscal policy such that a policy designed to achieve one goal may adversely affect another. For example, an expansionary fiscal policy may worsen inflation in an economy

8. Supply-side economists are of the opinion that certain fiscal measures will cause disincentives. For example, increase in profits tax may adversely affect the incentives of firms to invest and an increase in social security benefits may adversely affect incentives to work and save.

9. Deficit financing increases the purchasing power of people. The production of goods and services, especially in under developed countries may not

{Any 6  
Points,  
Each  
1/2  
Mark}



catch up simultaneously to meet the increased demand. This will result in prices spiraling beyond control.

10. Increase in government borrowing creates perpetual burden on even future generations as debts have to be repaid. If the economy lags behind in productive utilization of borrowed money, sufficient surpluses will not be generated for servicing debts. External debt burden has been a constant problem for India and many developing countries.

**Answer:**

- (d) During recession and depression, the tax policy is framed to encourage private consumption and investment. A general reduction in income taxes leaves higher disposable incomes with people inducing higher consumption. Low corporate taxes increase the prospects of profits for business and promote further investment. The extent of tax reduction and /or increase in government spending required depends on the size of the recessionary gap and the magnitude of the multiplier. } {1 M}
- During inflation, new taxes can be levied and the rates of existing taxes are raised to reduce disposable incomes and to wipe off the surplus purchasing power. However, excessive taxation usually stifles new investments and therefore the government has to be cautious about a policy of tax increase. } {1 M}

**Answer 11:**

- (a) (i) Government intervenes to ensure price stability and thus regulate aggregate demand with two policy instruments namely, monetary (credit) policy and fiscal (budgetary) policy. Monetary policy attempts to stabilise aggregate demand in the economy by influencing the availability and cost of money, i.e., the rate of interest. Fiscal policy, on the other hand, aims at influencing aggregate demand by altering tax, public expenditure and public debt of the government. When total spending is too low, the government may increase its spending and/or lower taxes to reduce unemployment and the central bank may lower interest rates. When total spending is excessive, the government may cut its spending and/or raise taxes to foster price stability and the central bank may raise interest rates. In addition, the government may initiate regulatory measures such as price ceiling and price floors. } {1 M}
- (ii)  $M_4 = \text{Currency and coins with the people} + \text{demand deposits with the banks (Current and Saving accounts)} + \text{other deposits with the RBI} + \text{Net time deposits with the banking system} + \text{Total deposits with the Post Office Savings (excluding National Savings Certificates)}$ . } {1 M}

Components	Rs. in Crores
Currency with the public	1,12,206.6
Demand deposits with banks	1,93,300.4
Other deposits with the RBI	614.8
Net time deposits with the banking system.	2,67,310.2
Post Office Savings deposits	277.5
Total	5,73,709.5

} {2 M}

**Answer:**

- (b) In recent years, apprehensions have been raised in respect of the WTO and its ability to maintain and extend a system of liberal world trade. 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. Moreover, contemporary trade barriers are much more complex } {1 M}

- and difficult to negotiate in a multilateral forum. Logically, these issues are found easier to discuss on bilateral or regional level.
- (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 contend that the real expansion of trade in the three key areas of agriculture, textiles and services has been dismal.
  - (vii) 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.
  - (viii) 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.
  - (ix) 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.
  - (x) Developing countries complain that they face exceptionally high tariffs on selected products in many markets and this obstructs their vital exports. Examples are tariff peaks on textiles, clothing, and fish and fish products.
  - (xi) 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.
  - (xii) 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.
  - (xiii) 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.

**(1/2 M  
for any 6  
points)**

**Answer:**

- (c) The Doha Round, formally the Doha Development Agenda, which is the ninth round since the Second World War was officially launched at the WTO's Fourth Ministerial Conference in Doha, Qatar, in November 2001. The round seeks to accomplish major modifications of the international trading system through lower trade barriers and revised trade rules. The negotiations include 20 areas of trade, including agriculture, services trade, market access for nonagricultural products, and certain intellectual property issues. The most controversial topic in the yet to conclude Doha Agenda has been agriculture trade.

**{1 M}**

**{1 M}**

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