(GI-1, GI-2, GI-3, GI-6, VI-1, SI-1, VDI-1)

DATE: 17.11.2021	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)   **Working Notes:**

    1.   Computation of Current Assets (CA) and Current Liabilities (CL)

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\frac{CA}{CL} = \frac{1.5}{1}$$

$\therefore$ CA   = 1.5 CL

CA - CL   = ₹ 1,50,000

1.5 CL - CL   = ₹ 1,50,000

0.5 CL   = ₹ 1,50,000

CL $= \dfrac{1,50,000}{0.5} = ₹\,3,00,000$

CA   = 1.5 x 3,00,000 = ₹ 4,50,000 **}{1 M}**

    2.   Computation of Bank Credit (BC) and Other Current Liabilities (OCL)

$$\frac{\text{Bank Credit}}{\text{Other CL}} = \frac{2}{1}$$

BC   = 2 OCL

BC + OCL   = CL

2 OCL + OCL   = Rs. 3,00,000

3 OCL   = Rs. 3,00,000

OCL   = Rs. 1,00,000

Bank Credit   = 2 × 1,00,000 = Rs. 2,00,000 **}{1 M}**

    3.   Computation of Inventory

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$= \frac{\text{Current Assets - Inventories}}{\text{Current Liabilities}}$$

$$0.8 = \frac{₹4,50,000 - \text{Inventories}}{₹\,3,00,000}$$

$0.8 \times$ Rs. 3,00,000   = Rs. 4,50,000 – Inventories
Inventories   = Rs. 4,50,000 – Rs. 2,40,000 = Rs. 2,10,000 **}{1 M}**

4. Computation of Debtors
    Inventory Turnover   = 5 times

$$\text{Average Inventory} = \frac{\text{Cost of goods sold (COGS)}}{\text{Inventory Turnover}}$$

COGS   = ₹ 2,10,000 × 5 = ₹ 10,50,000

Average Collection Period (ACP)   = 1.5 months = 45 days

$$\text{Debtors Turnover} = \frac{360}{\text{ACP}} = \frac{360}{45} = 8$$

$$\text{Gross Margin} = \frac{\text{Sales - COGS}}{\text{Sales}} \times 100 = 25\%$$

$$\text{Sales-COGS} = \frac{25 \times \text{Sales}}{100}$$

Sales – 0.25 Sales   = COGS

0.75 Sales   = ₹ 10,50,000

$$\text{Sales} = \frac{₹ 10,50,000}{0.75} = ₹ 14,00,000$$

$$\text{Debtors} = \frac{\text{Sales}}{\text{Debtors Turnover}}$$

$$= \frac{₹ 14,00,000}{8} = ₹ 1,75,000 \quad \text{\textbf{\}\{1 M\}}}$$

5. Computation of Bank and Cash
    Bank & Cash   = CA - (Debtors + Inventory)
                    = Rs. 4,50,000 - (Rs. 1,75,000 + 2,10,000) = Rs. 4,50,000 - 3,85,000 = Rs. 65,000 **}{1 M}**

6. Computation of Reserves & Surplus

$$\frac{\text{Reserves \& Surplus}}{\text{Bank \& Cash}} = 4$$

Reserves & Surplus = 4 x Rs. 65,000 = Rs. 2,60,000 **}{1 M}**

Balance Sheet of SONA Ltd. as on March 31, 2016

Liabilities	Rs.	Assets	Rs.
Share Capital	5,75,000	Fixed Assets	6,85,000
Reserves & Surplus	2,60,000	Current Assets:	
Current Liabilities:		Inventories	2,10,000
Bank Credit	2,00,000	Debtors	1,75,000
Other Current Liabilities	1,00,000	Bank & Cash	65,000
	11,35,000		11,35,000

{1 M}

Answer:

(b)   (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 RS. 2 Lakhs	Debt	0.4	10% (1 – 0.5) =5%	0.4× 5 =2.0
	Equity	0.6	12%	0.6 × 12 = 7.2
				9.2%
Above RS. 2 lakhs & upto to RS. 5 Lakhs	Debt	0.4	11% (1 – 0.5) =5.5%	0.4 × 5.5 = 2.2
	Equity	0.6	13%	0.6 × 13 = 7.8
				10.0%
Above RS. 5 lakhs & upto RS. 10 lakhs	Debt	0.4	12% (1 – 0.5) =6%	0.4 × 6 =2.4
	Equity	0.6	14%	0.6 × 14 = 8.4
				10.8%
Above RS. 10 lakhs & upto RS. 20 lakhs	Debt	0.4	13% (1 – 0.5) =6.5%	0.4 × 6.5 = 2.6
	Equity	0.6	14.5%	0.6 × 14.5 = 8.7
				11.3%

{2 M}

Project	Fund requirement	Cost of capital
X	Rs. 6.5 lakhs	10.8% (from the above table)
Y	Rs. 14 lakhs	11.3% (from the above table)

{2 M}

(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 lahs or, after tax return should be more than or at least equal to the weighted average cost of capital. {2 M}

Answer:

(c)   (a)   Assuming no tax as per MM Approach.

Calculation of Value of Firms 'A Ltd.' and 'B Ltd' according to MM Hypothesis Market Value of 'B Ltd' [Unlevered(u)]

Total Value of Unlevered Firm (V_u) = [NOI/ke] = 18,00,000/0.18 = Rs.   1,00,00,000   }{1 M}

Ke of Unlevered Firm (given) = 0.18

Ko of Unlevered Firm (Same as above = ke as there is no debt) = 0.18

Market Value of 'A Ltd' [Levered Firm (I)]

Total Value of Levered Firm (V_L) = V_u + (Debt× Nil) = Rs.   1,00,00,000 + (54,00,000 × nil)

= Rs.   1,00,00,000   }{1 M}

Computation of Equity Capitalization Rate and Weighted Average Cost of Capital (WACC)

	Particulars	A Ltd.	B Ltd.
A.	Net Operating Income (NOI)	18,00,000	18,00,000
B	Less: Interest on Debt (I)	6,48,000	-
C	Earnings of Equity Shareholders (NI)	11,52,000	18,00,000
D	Overall Capitalization Rate (k_o)	0.18	0.18
E	Total Value of Firm (V = NOI/k_O)	1,00,00,000	1,00,00,000

F	Less: Market Value of Debt	54,00,000	-
G	Market Value of Equity (S)	46,00,000	1,00,00,000
H	Equity Capitalization Rate [ke = NI /S]	0.2504	0.18
I	Weighted Average Cost of Capital [WACC (ko)]* ko = (ke×S/V) + (kd×D/V)	0.18	0.18

*Computation of WACC A Ltd

Component of Capital	Amount	Weight	Cost of Capital	WACC	
Equity	46,00,000	0.46	0.2504	0.1152	}$\{1^{1/2}$ M}
Debt	54,00,000	0.54	0.12*	0.0648	
Total	81,60,000			0.18	

*K_d = 12% (since there is no tax)

WACC = 18%

(b)   **Assuming 40% taxes as per MMApproach**
Calculation of Value of Firms 'A Ltd.' and 'B Ltd' according to MM Hypothesis
Market Value of 'B Ltd' [Unlevered(u)]
Total Value of unlevered Firm (V_u) = [NOI (1 - t)/ke = 18,00,000 (1 – 0.40)] / 0.18
$$= Rs.\ 60,00,000 \quad \text{\}\{1 M\}}$$

K_e of unlevered Firm (given) = 0.18
K_o of unlevered Firm (Same as above = ke as there is no debt) = 0.18
Market Value of 'A Ltd' [Levered Firm (I)]
Total Value of Levered Firm (V_L) = V_u + (Debt× Tax)
$$= Rs.\ 60,00,000 + (54,00,000 \times 0.4)$$
$$= Rs.\ 81,60,000 \quad \text{\}\{1 M\}}$$

Computation of Weighted Average Cost of Capital (WACC) of 'B Ltd.'

= 18% (i.e. K_e = K_O)

Computation of Equity Capitalization Rate and
Weighted Average Cost of Capital (WACC) of a Ltd

Particulars	A Ltd.
Net Operating Income (NOI)	18,00,000
Less: Interest on Debt (I)	6,48,000
Earnings Before Tax (EBT)	11,52,000
Less: Tax @ 40%	4,60,800
Earnings for equity shareholders (NI)	6,91,200
Total Value of Firm (V) as calculated above	81,60,000
Less: Market Value of Debt	54,00,000
Market Value of Equity (S)	27,60,000
Equity Capitalization Rate [ke = NI/S]	0.2504
Weighted Average Cost of Capital (ko)* ko = (ke×S/V) + (kd×D/V)	13.23

*Computation of WACC A Ltd

Component of Capital	Amount	Weight	Cost of Capital	WACC
Equity	27,60,000	0.338	0.2504	0.0846
Debt	54,00,000	0.662	0.072*	0.0477
Total	81,60,000			0.1323

$\{1^{1/2}$ M$\}$

*Kd= 12% (1- 0.4) = 12% × 0.6 = 7.2%

WACC = 13.23%

Answer 2:

Income Statement

Particulars	Amount (₹)
Sales	75,00,000
Less: Variable cost (56% of 75,00,000)	42,00,000
Contribution	33,00,000
Less: Fixed costs	6,00,000
Earnings before interest and tax (EBIT)	27,00,000
Less: Interest on debt (@ 9% on ₹ 45 lakhs)	4,05,000
Earnings before tax (EBT)	22,95,000

$\{1$ M$\}$

(i) $\text{ROI} = \dfrac{\text{EBIT}}{\text{Capital employed}} \times 100 = \dfrac{\text{EBIT}}{\text{Equity} + \text{Debt}} \times 100$

$= \dfrac{₹\,27,00,000}{₹\,(55,00,000 + 45,00,000)} \times 100 = 27\%$ $\}\{1$ M$\}$

(ROI is calculated on Capital Employed)

(ii) ROI = 27% and Interest on debt is 9%, hence, it has a favourable financial leverage. $\}\{1$ M$\}$

(iii) $\text{Capital Turnover} = \dfrac{\text{Net Sales}}{\text{Capital}}$

Or $= \dfrac{\text{Net Sales}}{\text{Capital}} = \dfrac{₹\,75,00,000}{₹\,1,00,00,000} = 0.75$

Which is very low as compared to industry average of 3. $\}\{1$ M$\}$

(iv) Calculation of Operating, Financial and Combined leverages

(a) $\text{Operating Leverage} = \dfrac{\text{Contribution}}{\text{EBIT}} = \dfrac{₹\,33,00,000}{₹\,27,00,000} = 1.22$ (approx) $\}\{1$ M$\}$

(b) $\text{Financial Leverage} = \dfrac{\text{EBIT}}{\text{EBT}} = \dfrac{₹\,27,00,000}{₹\,22,95,000} = 1.18$ (approx) $\}\{1$ M$\}$

(c) $\text{Combined Leverage} = \dfrac{\text{Contribution}}{\text{EBT}} = \dfrac{₹\,33,00,000}{₹\,22,95,000} = 1.44$ (approx) $\}\{1$ M$\}$

Or = Operating Leverage × Financial Leverage = 1.22 × 1.18 = 1.44 (approx)

(v) Operating leverage is 1.22. So if sales is increased by 10%.

EBIT will be increased by 1.22 × 10 i.e. 12.20% (approx) }{1 M}

(vi) Since the combined Leverage is 1.44, sales have to drop by 100/1.44 i.e. 69.44% to bring EBT to Zero

Accordingly, New Sales = ₹ 75,00,000 × (1 - 0.6944)

= ₹ 75,00,000 × 0.3056

= ₹ 22,92,000 (approx) }{1 M}

Hence at ₹ 22,92,000 sales level EBT of the firm will be equal to Zero.

(vii) Financial leverage is 1.18. So, if EBIT increases by 20% then EBT will increase by

1.18 × 20 = 23.6% (approx) }{1 M}

Answer 3:

(₹000)

Year	Sales	VC	FC	Dep.	Profit	Tax	PAT	Dep.	Cash inflow	
1	86.40	51.84	18	21.875	(5.315)	—	—	21.875	16.56	
2	129.60	77.76	18	21.875	11.965	1.995*	9.97	21.875	31.845	{3 M}
3	312.00	187.20	18	21.875	84.925	25.4775	59.4475	21.875	81.3225	
4—5	324.00	194.40	18	24.125	87.475	26.2425	61.2325	24.125	85.3575	
6—8	216.00	129.60	18	24.125	44.275	13.2825	30.9925	24.125	55.1175	

* (30% of 11.965 – 30% of 5.315) = 3.5895 – 1.5945 = 1.995)

		₹	
Cost of New Equipment		1,75,00,000	
Less: Subsidy		25,00,000	{2 M}
Add: Working Capital		20,00,000	
Outflow		1,70,00,000	

Calculation of NPV

Year		Cash inflows	PV factor	NPV	
		(₹)		(₹)	
1		16,56,000	.893	14,78,808	
2		31,84,500	.797	25,38,047	
3	81,32,250 − 12,50,000 = 68,82,250		.712	49,00,162	
4		85,35,750	.636	54,28,737	{2 M}
5		85,35,750	.567	48,39,770	
6		55,11,750	.507	27,94,457	
7		55,11,750	.452	24,91,311	
8	55,11,750 + 20,00,000 + 1,25,000 = 76,36,750		.404	30,85,247	
		Net Present Value		2,75,56,539	

NPV	2,75,56,539	⎫
Less: Out flow	1,70,00,000	⎬ **{2 M}**
Saving	1,05,56,539	⎭

Advise: Since the project has a positive NPV, therefore, it should be accepted. **⎬{1 M}**

Answer 4:
Calculation of Net Working Capital requirement:

	(Rs.)	(Rs.)
A. Current Assets:		
Inventories:		
Stock of Raw material (Refer to Working note (iii)	1,44,000 }**{1 M}**	
Stock of Work in progress (Refer to Working note (ii)	7,50,000 }**{1 M}**	
Stock of Finished goods (Refer to Working note (iv)	20,40,000 }**{1 M}**	
Debtors for Sales (Refer to Working note (v)	1,02,000 }**{1 M}**	
Cash	2,00,000 }**{1/2 M}**	
Gross Working Capital	32,36,000	32,36,000
B. Current Liabilities:		
Creditors for Purchases (Refer to Working note (vi)	1,56,000 }**{1 M}**	
Creditors for wages (Refer to Working note (vii)	23,250 }**{1 M}**	
	1,79,250	1,79,250
Net Working Capital (A - B)		30,56,750 }**{1/2 M}**

Working Notes:

(i)   **Annual cost of production**

	(Rs.)	
Raw material requirements {(31,200 × **Rs.** 40) + (12,000 x **Rs.** 40)}	17,28,000	⎫
Direct wages {(31,200 ×**Rs.** 15) +(12,000 X **Rs.** 15 x 0.5)}	5,58,000	
Overheads (exclusive of depreciation) {(31,200 × **Rs.** 30) + (12,000 x **Rs.** 30 x 0.5)}	11,16,000	⎬ **{2 M}**
Gross Factory Cost	34,02,000	
Less: Closing W.I.P [12,000 (**Rs.** 40 + **Rs.** 7.5 + **Rs.**15)]	(7,50,000)	
Cost of Goods Produced	26,52,000	
Less: Closing Stock of Finished Goods (**Rs.** 26,52,000 × 24,000/31,200)	(20,40,000)	
Total Cash Cost of Sales	6,12,000	⎭

(ii)   **Work in progress stock**

	(Rs.)
Raw material requirements (12,000 units × **Rs.**40)	4,80,000
Direct wages (50% × 12,000 units × **Rs.** 15)	90,000
Overheads (50% × 12,000 units × **Rs.** 30)	1,80,000
	7,50,000

(iii)   **Raw material stock**

It is given that raw material in stock is average 30 days 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 (360 days) is as follows:

	(Rs.)
For Finished goods (31,200 × **Rs.** 40)	12,48,000
For Work in progress (12,000 × **Rs.** 40)	4,80,000
	17,28,000

Raw material stock = $\dfrac{\text{**Rs.** 17,28,000}}{\text{360 days}} \times 30 \text{ days} = \text{**Rs.** 1,44,000}$

(iv)   **Finished goods stock:**
24,000 units @ **Rs.** (40+15+30) per unit = **Rs.** 20,40,000

(v)   **Debtors for sale: Rs.** $6,12,000 \times \dfrac{60 \text{days}}{360 \text{ days}} = 1,02,000$

(vi)   **Creditors for raw material Purchases [Working Note (iii)]:**

Annual Material Consumed (**Rs.** 12,48,000 + **Rs.** 4,80,000)	**Rs.** 17,28,000	
Add: Closing stock of raw material	**Rs.** 1,44,000	}{1 M}
	Rs. 18,72,000	

Credit allowed by suppliers = $\dfrac{\text{**Rs.** 18,72,000}}{\text{360 days}} \times 30 \text{ days} = \text{**Rs.** 1,56,000}$

(vii)   **Creditors for wages:**

Outstanding wage payment = $\dfrac{\text{**Rs.** 5,58,000}}{\text{360 days}} \times 15 \text{ days} = \text{**Rs.** 23,250}$

Answer 5:
Evaluation of Credit Policy Working Notes:
(i)   Calculation of Cash Discount

Cash Discount = Total credit sales × % of customers who take up discount × Rate

Present Policy = $\dfrac{12,00,000 \times 50 \times .01}{100} = ₹\, 6,000$ }{1 M}

Proposed Policy = $16,00,000 \times 0.80 \times 0.02 = ₹\, 25,600$ }{1 M}

(ii)   Opportunity Cost of Investment in Receivables

Present Policy = $9,36,000 \times (30/360) \times (70\% \text{ of } 15)/100 = 78,000 \times 10.5/100 = ₹\, 8,190$ }{1 M}

Proposed Policy = $12,48,000 \times (20/360) \times 10.50/100 = ₹\, 7,280$ }{1 M}

Statement showing Evaluation of Credit Policies

Particulars	Present Policy	Proposed Policy
Credit Sales	12,00,000	16,00,000
Variable Cost @ 78% of sales	9,36,000	12,48,000

Bad Debts @ 1.5% and 2%	18,000	32,000
Cash Discount	6,000	25,600
Profit before tax	2,40,000	2,94,400
Tax @ 30%	72,000	88,320
Profit after Tax	1,68,000	2,06,080
Opportunity Cost of Investment in Receivables	8,190	7,280
Net Profit	1,59,810 }{2 M}	1,98,800 }{2 M}

Advise: Proposed policy should be adopted since the net benefit is increased by (Rs. 1,98,800 - 1,59,810) Rs. 38,990. **{2 M}**

Answer 6:

(a) **Agency Problem and Agency Cost:** Though in a sole proprietorship firm, partnership etc., owners participate in management but incorporates, owners are not active in management so, there is a separation between owner/ shareholders and managers. In theory, managers should act in the best interest of shareholders however in reality, managers may try to maximise their individual goal like salary, perks etc., so there is a principal agent relationship between managers and owners, which is known as **Agency Problem**. In a nutshell, Agency Problem is the chances that managers may place personal goals ahead of the goal of owners. Agency Problem leads to Agency Cost. **Agency cost** is the additional cost borne by the shareholders to monitor the manager and control their behaviour to maximise shareholders wealth. Generally, Agency Costs are of four types (i) monitoring (ii) bonding (iii) opportunity (iv) structuring. **{3 M}**

Answer:

(b) **Commercial Paper:** A Commercial Paper is an unsecured money market instrument issued in the form of a promissory note. The Reserve Bank of India introduced the commercial paper scheme in the year 1989 with a view to enabling highly rated corporate borrowers to diversify their sources of short- term borrowings and to provide an additional instrument to investors. Subsequently, in addition to the Corporate, Primary Dealers and All India Financial Institutions have also been allowed to issue Commercial Papers. Commercial papers are issued in denominations of Rs. 5 lakhs or multiples thereof and the interest rate is generally linked to the yield on the one-year government bond.
All eligible issuers are required to get the credit rating from Credit Rating Information Services of India Ltd, (CRISIL), or the Investment Information and Credit Rating Agency of India Ltd (ICRA) or the Credit Analysis and Research Ltd (CARE) or the FITCH Ratings India Pvt. Ltd or any such other credit rating agency as is specified by the Reserve Bank of India. **{4 M}**

Answer:

(c) **Billing Float:** An invoice is the formal document that a seller prepares and sends to the purchaser as the payment request for goods sold or services provided. The time between the sale and the mailing of the invoice is the billing float. **{1¹ᐟ² M}**
Mail Float: This is the time when a cheque is being processed by post office, messenger service or other means of delivery. **{1¹ᐟ² 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 equestions 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) $GDP_{MP} = C + I + G + (X – Z)$
              $110 + 20 + (70 – 20) + (20 – 50) = 150$ million   {1 M}

       (ii) GNP_{MP}= GDP at market prices + net property income from abroad {1 M}
              $150 + 10 = 160$ million

       (iii)   GDP at factor cost = GDP market prices – indirect {1 M}
              taxes $150 – 30 = 120$ million

       (iv)   Per Capita Income $= \dfrac{GNP\ at\ Factor\ Cost}{Population} = (160\ m\ –\ 30\ m)\ /\ 0.5\ million$ {2 M}
              $= 130 / 0.5 = 260$

Answer:
(b) National Income is defined as the net value of all economic goods and services produced within the domestic territory of a country in an accounting year plus the net factor income from abroad. According to the Central Statistical Organization (CSO) 'National income is the sum total of factor incomes generated by the normal residents of a country in the form of wages, rent, interest and profit in an accounting year'. {1 M}

National income may be measured at current prices or at constant prices. If goods and services produced in a year are valued at current prices, i.e., market price prevailing in the year in which goods and services are produced, we get national income at current prices or nominal national income. If goods and services produced in a year are valued at 'fixed' prices, i.e., prices that prevailed during a previous year chosen as base year, we get national income at constant prices or real national income. Thus GDP at constant prices is the value of domestic product in terms of constant prices of a chosen base year. A base year is a carefully chosen year which is a normal year free from price fluctuations. {1 M}

The GDP market prices is sensitive to changes in average price level. The same physical output will correspond to a different GDP level if the average level of market prices changes. That is, if prices rise, GDP measured at market prices will also rise without any real increase in physical output. This is misleading because it does not reflect changes in the actual volume of output. GDP at current prices makes no adjustment for inflation or deflation. GDP at constant prices is inflation /deflation corrected and can be used to measure true growth of GDP. For example, the GDP of 2015-16 may be expressed either at prices of that year or at prices that prevailed in 2011-12. In the former case, GDP will be affected by price changes, but in the latter case GDP will change only when there has been a change in physical output. Since real national income accurately reflects the real change in physical output of a country, it can be used to make a year to year comparison of changes in the volume of output of goods and services. {1 M}

Answer:

(c)

Marginal Propensity to Consume (MPC) $= \dfrac{\Delta C}{\Delta Y}$

Where ΔC is change in consumption and ΔY is change in income

$\Delta C = (9,000 - 6,000)$; $\Delta Y = (12,000 - 8,000)$

$\dfrac{\Delta C}{\Delta Y} = \dfrac{3000}{4000} = 0.75$ **{1 M}**

Marginal Propensity to Save (MPS) $= \dfrac{\Delta S}{\Delta Y} = 1 - \dfrac{\Delta C}{\Delta Y} = 1 - 0.75 = 0.25$ **{1 M}**

OR

$S = Y - C$

Marginal Propensity to Save (MPS) $= \dfrac{\Delta S}{\Delta Y}$

$\dfrac{(12000 - 9000) - (8000 - 6000)}{(12000 - 8000)}$

$= \dfrac{1000}{4000} = 0.25$ **{2 M}**

Answer 8:

(a) The principal objective of the WTO is to facilitate the flow of international trade smoothly, freely, fairly and predictably. To achieve this, the WTO endeavors:

(i)   to set and enforce rules for international trade,

(ii)   to provide a forum for negotiating and monitoring further trade liberalization

(iii) to resolve trade disputes

(iv)   to increase the transparency of decision-making processes

(v)   to cooperate with other major international economic institutions involved in global economic management, and

(vi)   to help developing countries benefit fully from the global trading system.

{1/2 M for Each Point}

When a country enjoys the best trade terms given by its trading partner it is said to enjoy the Most Favored Nation (MFN) status. Originally formulated as Article 1 of GATT, this principle of non discrimination states that any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be extended immediately and unconditionally to the like product originating or destined for the territories of all other contracting parties. Under the WTO agreements, countries cannot normally discriminate between their trading partners. If a country improves the benefits that it gives to one trading partner, (such as a lower a trade barrier, or opens up a market), it has to give the same best treatment to all the other WTO members too in respect of the same goods or services so that they all remain 'most-favoured'. As per the WTO agreements, each member treats all the other members equally as "most-favoured" trading partners.

{2 M}

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 9:

(a) 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. **{2 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.

$$\text{Money Supply (m)} = \frac{Money \quad Supply}{Monetary \quad Base}$$

{1 M}

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. **{2 M}**

Answer:

(b) According to Keynes' theory of liquidity preference, speculative motive for holding cash is related to market interest. The market value of bonds and the market rate of interest are inversely related. A rise in the market rate of interest leads to a decrease in the market value of the bond, and vice versa. Investors have a relatively fixed conception of the 'normal' or 'critical' interest rate and compare the current rate of interest with such 'normal' or 'critical' rate of interest. **{1 M}**

If wealth-holders consider that the current rate of interest is high compared to the 'normal or critical rate of interest', they expect a fall in the interest rate (rise in bond prices). At the high current rate of interest, they will convert their cash balances into bonds because:

(i)   they can earn high rate of return on bonds

(ii)   they expect capital gains resulting from a rise in bond prices consequent upon an expected fall in the market rate of interest in future.

Conversely, if the wealth-holders consider the current interest rate as low, compared to the 'normal or critical rate of interest', i.e., if they expect the rate of interest to rise in future (fall in bond prices), they would have an incentive to hold their wealth in the form of liquid cash rather than bonds because: **{1 M}**

(i)   the loss suffered by way of interest income forgone is small,

(ii)   they can avoid the capital losses that would result from the anticipated increase in interest rates, and

(iii)   the return on money balances will be greater than the return on alternative assets

(iv)   If the interest rate does increase in future, the bond prices will fall and the idle cash balances held can be used to buy bonds at lower price and can thereby make a capital-gain. **{1 M}**

Summing up, so long as the current rate of interest is higher than the critical rate of interest, a typical wealth-holder would hold in his asset portfolio only government bonds while if the current rate of interest is lower than the critical rate of interest, his asset portfolio would consist wholly of cash. When the current rate of interest is equal to the critical rate of interest, a wealth-holder is indifferent to holding either cash or bonds. The inference from the above is that the speculative demand for money and interest are inversely related.

Answer:

(c) Leakages: A leakage is an outflow or withdrawal of income from the circular flow. Leakages are money leaving the circular flow and therefore, not available for spending on currently produced goods and services. Leakages reduce the flow of income. **{1 M}**

Injections: An injection is a non-consumption expenditure. It is an expenditure on goods and services produced within the domestic territory but not used by the domestic household for consumption purposes. Injections are exogenous additions to the circular flow and add to the total volume of the basic circular flow.

In the two-sector model with households and firms, household saving is the only leakage and investment is the only injection. In the three-sector model which includes the government, saving and taxes are the two leakages and investment and government purchases are the two injections. In the four- sector model which includes foreign sector also, saving, taxes, and imports are the three leakages; investment, government purchases, and exports are the three injections. **{1 M}**

The state of equilibrium occurs when the total leakages are equal to the total injections that occur in the economy.

Savings + Taxes + Imports = Investment + Government Spending + Exports

Answer 10:

(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. **{1 M}**

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. **{2 M}**

- 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. **{2 M}**

    (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.

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) 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. **{1 M}**

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 **{1 M}** 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.

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 11:

(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 = $\dfrac{1}{Required\ Reserve\ Ratio}$

    (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.	**{1 M}**
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}**

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