PAPER – 8: FINANCIAL MANAGEMENT AND ECONOMICS FOR FINANCE

SECTION A: FINANCIAL MANAGEMENT

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of 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 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 answer.

Question 1

(a) Following information are given for a company:

Earnings per share	*₹ 10*
P/E ratio	*12.5*
Rate of return on investment	*12%*
Market price per share as per Walter's Model	*₹ 130*

You are required to calculate:

(i) Dividend payout ratio.

(ii) Market price of share at optimum dividend payout ratio.

(iii) P/E ratio, at which the dividend policy will have no effect on the price of share.

(iv) Market price of share at this P/E ratio.

(v) Market price of share using Dividend growth model. ***(5 Marks)***

(b) A company has current sale of ₹ 12 lakhs per year. The profit-volume ratio is 20% and post-tax cost of investment in receivables is 15%. The current credit terms are 1/10, net 50 days and average collection period is 40 days. 50% of customers in terms of sales revenue are availing cash discount and bad debt is 2% of sales.

In order to increase sales, the company want to liberalize its existing credit terms to 2/10, net 35 days. Due to which, expected sales will increase to ₹ 15 lakhs. Percentage of default in sales will remain same. Average collection period will decrease by 10 days. 80% of customers in terms of sales revenue are expected to avail cash discount under this proposed policy.

Tax rate is 30%.

ADVISE, should the company change its credit terms. (Assume 360 days in a year.)

(5 Marks)

(c) *A company wants to invest in a project. This requires an initial investment of ₹ 4,50,000. Salvage value after estimated useful life of 5 years is ₹ 50,000. Other details of project are as follows:*

	Worst case	Most likely	Best case
Contribution (₹)	3,30,000	5,40,000	6,31,250
Fixed cost (excluding depreciation) (₹)	75,000	1,50,000	2,00,000

Tax rate is 40%. Expected cost of capital of project is 12%. Ignore tax on capital gain.

(i) *Calculate NPV in each scenario.*

(ii) *The company is certain about most likely result in first two years, but uncertain about remaining period. In such a situation, calculate NPV expecting worst case scenario during next two years and best case scenario in the remaining period.*

Years	1	2	3	4	5
$PVIF_{0.12,t}$	0.893	0.797	0.712	0.636	0.567
$PVIFA_{0.12,t}$	0.893	1.690	2.402	3.038	3.605

(5 Marks)

(d) *Following information is given for X Ltd.:*

Total contribution (₹)	4,25,000
Operating leverage	3.125
15% Preference shares (₹ 100 each)	1,000
Number of equity shares	2,500
Tax rate	50%

Calculate EPS of X Ltd., if 40% decrease in sales will result EPS to zero. **(5 Marks)**

Answer

(a) (i) The EPS of the firm is ₹ 10, r =12%. The P/E Ratio is given at 12.5 and the cost of capital (K_e) may be taken as the inverse of P/E ratio. Therefore, K_e is 8% (i.e., 1/12.5). The value of the share is ₹ 130 which may be equated with Walter Model as follows:

$$P = \frac{D+\frac{r}{K_e}(E-D)}{K_e} \text{ or } P = \frac{D+\frac{12\%}{8\%}(10-D)}{8\%}$$

or [D+1.5(10-D)]/0.08=130

or D+15-1.5D=10.4

or -0.5D=-4.6

So, D = ₹ 9.2

The firm has a dividend pay-out of 92% (i.e., 9.2/10).

(ii) Since the rate of return of the firm (r) is 12% and it is more than the Ke of 8%, therefore, by distributing 92% of earnings, the firm is not following an optimal dividend policy. The optimal dividend policy for the firm would be to pay zero dividend and in such a situation, the market price would be:

$$P = \frac{0+\frac{12\%}{8\%}(10-0)}{8\%}$$

P = ₹ 187.5

So, theoretically the market price of the share can be increased by adopting a zero pay-out.

(iii) The P/E ratio at which the dividend policy will have no effect on the value of the share is such at which the K_e would be equal to the rate of return (r) of the firm. The K_e would be 12% (= r) at the P/E ratio of 1/12%=8.33. Therefore, at the P/E ratio of 8.33, the dividend policy would have no effect on the value of the share.

(iv) If the P/E is 8.33 instead of 12.5, then the K_e which is the inverse of P/E ratio, would be 12% and in such a situation k_e= r and the market price, as per Walter's model would be:

$$P = \frac{D+\frac{r}{K_e}(E-D)}{K_e} = \frac{9.2+\frac{0.12}{0.12}(10-9.2)}{0.12} = ₹\ 83.33$$

(v) Dividend Growth Model applying growth on dividend

K_e = 8%, r = 12%, D_0 = 9.2, b = 0.08

g = b.r

g = 0.08 x 0.12=0.96%

$D_1 = D_0 (1+g)$ = 9.2 (1+0.0096) = ₹ 9.2883

$$\mathbf{P} = \frac{D1}{(Ke-g)}$$ = 9.2883/(0.08 – 0.0096) = 9.2883/0.0704 = ₹ 131.936

Alternative

Alternatively, without applying growth on dividend

$$P = \frac{E(1-b)}{Ke-br} = \frac{10(1-0.08)}{0.08-(0.08\times 0.12)} = ₹\ 130.68$$

(b) (i) Calculation of Cash Discount

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

$$\text{Present Policy} = \frac{12,00,000\times 50\times 0.01}{100} = ₹\ 6,000$$

Proposed Policy = 15,00,000 × 0.80 × 0.02 = ₹ 24,000

(ii) Opportunity Cost of Investment in Receivables

$$\text{Present Policy: Opportunity Cost} = \text{Total Cost} \times \frac{\text{Collection period}}{360} \times \frac{\text{Rate of Return}}{100}$$

$$= 9,60,000 \times \frac{40}{360} \times \frac{15}{100} = ₹\ 16,000$$

$$\text{Proposed Policy: = Total Cost} \times \frac{\text{Collection period}}{360} \times \frac{\text{Rate of Return}}{100}$$

$$= 12,00,000 \times \frac{30}{360} \times \frac{15}{100} = ₹\ 15,000$$

Statement showing Evaluation of Credit Policies

Particulars	**Present Policy**	**Proposed Policy**
Credit Sales	12,00,000	15,00,000
Variable Cost @ 80%* of sales	9,60,000	12,00,000
Bad Debts @ 2%	24,000	30,000
Cash Discount	6,000	24,000
Profit before tax	**2,10,000**	**2,46,000**
Tax @ 30%	63,000	73,800
Profit after Tax	**1,47,000**	**1,72,200**
Opportunity Cost of Investment in Receivables	16,000	15,000
Net Profit	**1,31,000**	**1,57,200**

*Only relevant or variable costs are considered for calculating the opportunity costs on the funds blocked in receivables. Since 20% is profit-volume ratio, hence the relevant costs are taken to be 80% of the respective sales.

Advise: Proposed policy should be adopted since the net benefit is increased by (₹ 1,57,200 - ₹ 1,31,000) **= ₹** 26,200.

Alternative presentation using incremental approach

	₹
Incremental sales (15,00,000 – 12,00,000)	3,00,000
Less: Incremental variable cost (12,00,000 – 9,60,000)	2,40,000
Less: Incremental Bad debts (30,000 – 24,000)	6,000
Less: Incremental Cash discount (24,000 – 6,000)	18,000
Increase in Profit Before Tax	**36,000**
Less: Tax @ 30%	10,800
Increase in Profit After Tax	**25,200**
Add: **Savings in opportunity cost** (16,000 - 15,000)	**1,000**
Increase in Net Profit	**26,200**

Advise: Proposed policy should be adopted since the net benefit is increased by (₹ 1,57,200 - ₹ 1,31,000)

= ₹ 26,200.

(c) (i) Initial Investment = ₹ 4,50,000

Salvage Value = ₹ 50,000

Useful Life = 5 years

Calculation of cash flow in each scenario

Particulars	Scenario		
	Worst case	Most Likely	Best case
Contribution	3,30,000	5,40,000	6,31,250
Less: Fixed Cost	75,000	1,50,000	2,00,000
Less: Depreciation	80,000	80,000	80,000
Profit before tax	1,75,000	3,10,000	3,51,250
Less: Taxes	70,000	1,24,000	1,40,500

Profit after tax	1,05,000	1,86,000	2,10,750
Add: Depreciation	80,000	80,000	80,000
Cash Flow After Tax	**1,85,000**	**2,66,000**	**2,90,750**

The possible outcomes will be as follows:

Year	PVF @ 12%	Worst Case		Most likely		Best case	
		Cash Flow	PV	Cash Flow	PV	Cash Flow	PV
0	1	(4,50,000)	(4,50,000)	(4,50,000)	(4,50,000)	(4,50,000)	(4,50,000)
1-5	3.605	1,85,000	6,66,925	2,66,000	9,58,930	2,90,750	10,48,153.75
5	0.567	50,000	28,350	50,000	28,350	50,000	28,350
NPV			**2,45,275**		**5,37,280**		**6,26,503.75**

Alternative presentation

(i) Computation of NPV of different scenarios

Years	DF	Worst case		Most-likely case		Best case	
		CF	DCF	CF	DCF	CF	DCF
0	1.000	(450000)	(450000)	(450000)	(450000)	(450000)	(450000)
1	0.893	185000	165205	266000	237538	290750	259640
2	0.797	185000	147445	266000	212002	290750	231728
3	0.712	185000	131720	266000	189392	290750	207014
4	0.636	185000	117660	266000	169176	290750	184917
5	0.567	185000	104895	266000	150822	290750	164855
5	0.567	50000	28350	50000	28350	50000	28350
NPV			**2,45,275**		**5,37,280**		**6,26,504**

(ii) If the company is certain about the most likely result in first two years but uncertain about the remaining period, then, NPV expecting worst case scenario during next two years and best-case scenario in remaining period will be as follows:

$$= -4,50,000 + \frac{₹2,66,000}{(1+0.12)} + \frac{₹2,66,000}{(1+0.12)^2} + \frac{₹1,85,000}{(1+0.12)^3} + \frac{₹1,85,000}{(1+0.12)^4} + \frac{₹2,90,750}{(1+0.12)^5} + \frac{₹50,000}{(1+0.12)^5}$$

= -4,50,000 + (2,66,000 × 0.893) + (2,66,000 × 0.797) + (1,85,000 × 0.712) + (1,85,000 × 0.636) + (2,90,750 × 0.567) + (50,000 × 0.567)

= -4,50,000 + 2,37,538 + 2,12,002 + 1,31,720 + 1,17,660 + 1,64,855 + 28,350

= ₹ 4,42,125

Alternative presentation

(ii) Computation of NPV on the basis of fixed scenarios

Years	Scenarios	DF	CF	DCF (DF*CF)
0	Initial Outflow	1.000	(450000)	**(450000)**
1	Most-likely case	0.893	266000	**237538**
2	Most-likely case	0.797	266000	**212002**
3	Worst case	0.712	185000	**131720**
4	Worst case	0.636	185000	**117660**
5	Best case	0.567	290750	**164855**
5	Salvage	0.567	50000	**28350**
				4,42,125

(All figures are in ₹)

(d) (i) Operating Leverage (OL) = $\frac{\text{Contribution}}{\text{EBIT}}$ Or, 3.125 = $\frac{₹\ 4,25,000}{\text{EBIT}}$ Or EBIT = ₹ 1,36,000

(ii) Degree of Combined Leverage (CL) = $\frac{\%\ \text{Change in EPS}}{\%\ \text{Change in Sales}} = \frac{100}{40} = 2.5$

(iii) Combined Leverage = OL × FL = 3.125 × FL

So, Financial Leverage = 2.5 /3.125 = 0.8

(iv) Financial Leverage = $\frac{\text{EBIT}}{\text{EBT}} = \frac{1,36,000}{\text{EBT}} = 0.8$

$$\text{So, EBT} = \frac{1,36,000}{0.80} = ₹\ 1,70,000$$

Calculation of EPS of X Ltd

Particulars	(₹)
EBT	1,70,000
Less: Tax (50%)	85,000

EAT	85,000
Preference Dividend	15,000
Net Earnings for Equity Shareholders	70,000
Number of equity shares	2,500
EPS	**28**

Question 2

Following information and ratios are given in respect of AQUA Ltd. for the year ended 31st March, 2023:

Current ratio	*4.0*
Acid test ratio	*2.5*
Inventory turnover ratio (based on sales)	*6*
Average collection period (days)	*70*
Earnings per share	*₹ 3.5*
Current liabilities	*₹ 3,10,000*
Total assets turnover ratio (based on sales)	*0.96*
Cash ratio	*0.43*
Proprietary ratio	*0.48*
Total equity dividend	*₹ 1,75,000*
Equity dividend coverage ratio	*1.60*

Assume 360 days in a year.

You are required to complete Balance Sheet as on 31st March, 2023.

Balance Sheet as on 31st March, 2023.

Liabilities	*₹*	*Assets*	*₹*
Equity share capital (₹10 per share)	*XXX*	*Fixed assets*	*XXX*
Reserves & surplus	*XXX*	*Inventory*	*XXX*
Long-term debt	*XXX*	*Debtors*	*XXX*
Current liabilities	*3,10,000*	*Loans & advances*	*XXX*
		Cash & bank	*XXX*
Total	*XXX*	*Total*	*XXX*

(10 Marks)

Answer

(i) Current Ratio = 4

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = 4$$

$$\therefore \frac{\text{Current Assets}}{3,10,000} = 4$$

$\therefore$ Current Assets = ₹ 12,40,000

(ii) Acid Test Ratio = 2.5

$$\frac{\text{Current Assets - Inventory}}{\text{Current Liabilities}} = 2.5$$

$$\therefore \frac{12,40,000 - \text{Inventory}}{3,10,000} = 2.5$$

$\therefore$ 12,40,000 – Inventory = ₹ 7,75,000

Inventory = ₹ 4,65,000

(iii) Inventory Turnover Ratio (on Sales) = 6

$$\frac{\text{Sales}}{\text{Inventory}} = 6$$

$$\frac{\text{Sales}}{4,65,000} = 6$$

$\therefore$ Sales = ₹ 27,90,000

(iv) Debtors Collection Period = 70 days

$\therefore$ (Debtors / sales) x 360 = 70

$\therefore$ (Debtors / 27,90,000) x 360 = 70

Debtors = ₹ 5,42,500

(v) Total Assets Turnover Ratio (on Sales) = 0.96

$$\therefore \frac{\text{Sales}}{\text{Total Assets}} = 0.96$$

$$\therefore \frac{27,90,000}{\text{Total Assets}} = 0.96$$

Total Assets = ₹ 29,06,250

(vi) Fixed Assets (FA) = Total Assets – Current Assets

= 29,06,250 – 12,40,000

Fixed Assets = ₹ 16,66,250

(vii) Cash Ratio = $\frac{\text{Cash}}{\text{Current Liabilities}} = 0.43$

$\therefore \frac{\text{Cash}}{3,10,000} = 0.43$

$\therefore$ Cash = ₹ 1,33,300

(viii) Proprietary Ratio = $\frac{\text{Proprietary Fund}}{\text{Total Assets}} = 0.48$

$\therefore \frac{\text{Proprietary Fund}}{29,06,250} = 0.48$

$\therefore$ Proprietary Fund = ₹ 13,95,000

(ix) Equity Dividend Coverage Ratio = 1.6

or $\frac{\text{EPS}}{\text{DPS}} = \frac{3.5}{\text{DPS}}$

$\therefore$ DPS = ₹ 2.1875

DPS = $\frac{\text{Total Dividend}}{\text{Number of Equity Shares}}$

$\therefore$ 2.1875 = $\frac{1,75,000}{\text{Number of Equity Shares}}$

$\therefore$ Number of Equity Shares = 80,000

$\therefore$ Equity Share Capital = 80,000 x 10 = ₹ 8,00,000

$\therefore$ Reserves &Surplus = 13,95,000 - 8,00,000 = ₹ 5,95,000

(x) Loans and Advances = Current Assets - (Inventory + Receivables + Cash & Bank)

= ₹ 12,40,000 - (₹ 4,65,000 + 5,42,500 + 1,33,300) = ₹ 99,200

Balance Sheet as on 31st March 2023

Liabilities	₹	Assets	₹
Equity Share Capital (₹ 10 per share)	8,00,000	Fixed Assets	16,66,250
Reserves & Surplus	5,95,000	Inventory	4,65,000
Long-term debt *(B/F)	12,01,250	Receivables	5,42,500
Current Liabilities	3,10,000	Loans & Advances	99,200
		Cash & Bank	1,33,300
Total	**29,06,250**	**Total**	**29,06,250**

Question 3

The following information pertains to CIZA Ltd.:

	₹
Capital Structure:	
Equity share capital (₹ 10 each)	*8,00,000*
Retained earnings	*20,00,000*
9% Preference share capital (₹ 100 each)	*12,00,000*
12% Long-term loan	*10,00,000*
Interest coverage ratio	*8*
Income tax rate	*30%*
Price – earnings ratio	*25*

The company is proposed to take up an expansion plan, which requires an additional investment of ₹ 34,50,000. Due to this proposed expansion, earnings before interest and taxes of the company will increase by ₹ 6,15,000 per annum. The additional fund can be raised in following manner:

- *By issue of equity shares at present market price, or*
- *By borrowing 16% Long-term loans from bank.*

You are informed that Debt-equity ratio (Debt/ Shareholders' fund) in the range of 50% to 80% will bring down the price-earnings ratio to 22 whereas; Debt-equity ratio over 80% will bring down the price-earnings ratio to 18.

Required:

Advise which option is most suitable to raise additional capital so that the Market Price per Share (MPS) is maximized. ***(10 Marks)***

Answer

Working notes:

(i) Interest Coverage ratio = 8

$$\frac{\text{EBIT}}{\text{Interest}} = 8$$

$$\frac{\text{EBIT}}{1{,}20{,}000} = 8$$

So, EBIT = ₹ 9,60,000

(ii) Proposed Earnings Before Interest & Tax = 9,60,000 + 6,15,000 = ₹ 15,75,000

Option 1: Equity option

Debt = ₹ 10,00,000

Shareholders Fund = 8,00,000+20,00,000+12,00,000+34,50,000 = ₹ 74,50,000

Debt Equity ratio(Debt/Shareholders fund) = $\frac{10{,}00{,}000}{74{,}50{,}000}$ = 13.42%

P/E ratio in this case will be 25 times

Option 2: Debt option

Debt = 10,00,000+34,50,000 = ₹ 44,50,000

Shareholders Fund = 8,00,000+20,00,000+12,00,000 = ₹ 40,00,000

Debt Equity ratio(Debt/Shareholders fund) = $\frac{44{,}50{,}000}{40{,}00{,}000}$ = 111.25%

Debt equity ratio has crossed the limit of 80% hence PE ratio in this case will remain at 18 times.

Number of Equity Shares to be issued = ₹ 34,50,000/ ₹ 150 = 23,000

(iii) Calculation of Earnings per Share and Market Price per share

Particulars	₹
Current Earnings Before Interest & Tax	9,60,000
Less: Interest	1,20,000
Earnings Before Tax	8,40,000
Less: Taxes	2,52,000
Earnings After Tax	5,88,000
Less: Preference Dividend (@9%)	1,08,000

Net earnings for Equity shareholders	4,80,000
Number of equity shares	80,000
Earnings Per Share	**6**
Price-earnings ratio	25
Market Price per share	**150**

Calculation of EPS and MPS under two financial options

Particulars	Financial Options	
	Option I Equity Shares Issued (₹)	**Option II** 16% Long Term Debt Raised (₹)
Earnings before interest and Tax (EBIT)	15,75,000	15,75,000
Less: Interest on old debentures @ 12%	1,20,000	1,20,000
Less: Interest on additional loan (new) @ 16% on ₹ 34,50,000	NIL	5,52,000
Earnings before tax	14,55,000	9,03,000
Less: Taxes @ 30%	4,36,500	2,70,900
(EAT/Profit after tax)	**10,18,500**	**6,32,100**
Less: Preference Dividend (@9%)	1,08,000	1,08,000
Net Earnings available to Equity shareholders	**9,10,500**	**5,24,100**
Number of Equity Shares	1,03,000	80,000
Earnings per Share (EPS)	**8.84**	**6.55**
Price/ Earnings ratio	25	18
Market price per share (MPS)	**221**	**117.9**

Advise: Equity option has higher Market Price per Share therefore company should raise additional fund through equity option.

Question 4

Capital structure of D Ltd. as on 31st March, 2023 is given below:

Particulars	***₹***
Equity share capital (₹ 10 each)	*30,00,000*
8% Preference share capital (₹ 100 each)	*10,00,000*
12% Debentures (₹ 100 each)	*10,00,000*

- *Current market price of equity share is ₹ 80 per share. The company has paid dividend of ₹ 14.07 per share. Seven years ago, it paid dividend of ₹ 10 per share. Expected dividend is ₹ 16 per share.*
- *8% Preference shares are redeemable at 6% premium after five years. Current market price per preference share is ₹ 104.*
- *12% debentures are redeemable at 20% premium after 10 years. Flotation cost is ₹ 5 per debenture.*
- *The company is in 40% tax bracket.*
- *In order to finance an expansion plan, the company intends to borrow 15% Long-term loan of ₹ 30,00,000 from bank. This financial decision is expected to increase dividend on equity share from ₹ 16 per share to ₹ 18 per share. However, the market price of equity share is expected to decline from ₹ 80 to ₹ 72 per share, because investors' required rate of return is based on current market conditions.*

Required:

(i) Determine the existing Weighted Average Cost of Capital (WACC) taking book value weights.

(ii) Compute Weighted Average Cost of Capital (WACC) after the expansion plan taking book value weights.

Interest Rate	*1%*	*2%*	*3%*	*4%*	*5%*	*6%*	*7%*
$FVIF_{i,5}$	*1.051*	*1.104*	*1.159*	*1.217*	*1.276*	*1.338*	*1.403*
$FVIF_{i,6}$	*1.062*	*1.126*	*1.194*	*1.265*	*1.340*	*1.419*	*1.501*
$FVIF_{i,7}$	*1.072*	*1.149*	*1.230*	*1.316*	*1.407*	*1.504*	*1.606*

(10 Marks)

Answer

(i) (a) Growth rate in Dividends

14.07 = 10 x FVIF (i,7 years)

FVIF (i,7 years) = 1.407

FVIF (5%, 7 years) = 1.407

i = 5%

Growth rate in dividend= 5%

(b) Cost of Equity

$$Ke = \frac{D_1}{P_0} + g$$

$$Ke = \frac{16}{80} + 0.05$$

Ke = 25%

(c) Cost of Preference Shares

$$Kp = \frac{PD + \frac{(RV-NP)}{n}}{\frac{(RV+NP)}{2}}$$

$$Kp = \frac{8 + \frac{(106-104)}{5}}{\frac{(106+104)}{2}}$$

Kp = 8.4/105

Kp = 8%

(d) Cost of Debt

$$Kd = \frac{I(1-t) + \frac{(RV-NP)}{n}}{\frac{(RV+NP)}{2}}$$

$$Kd = \frac{12(1-0.4) + \frac{(120-95)}{10}}{\frac{(120+95)}{2}}$$

Kd = (7.2+2.5)/107.5 = 9.02%

Kd = 9.02%

Calculation of existing Weighted Average Cost of Capital (WACC)

Capital	Amount (₹)	Weights	Cost	WACC
Equity Share Capital	30,00,000	0.6	25%	15.00%
Preference Share Capital	10,00,000	0.2	8%	1.60%
Debenture	10,00,000	0.2	9.02%	1.80%
	50,00,000	1		**18.40%**

Alternative presentation

(i) Computation of existing WACC on book value weights

Source (1)	Book value (₹) (2)	Weight (3)	Cost of capital (%) (4)	Product (2) x (4)
Equity share capital	30,00,000	0.60	25	7,50,000
Preference share capital	10,00,000	0.20	8	80,000
Debentures	10,00,000	0.20	9.02	90,200
Total	**50,00,000**	**1.00**		**9,20,200**

WACC = (Product / Total book value) x 100 = (9,20,200 /50,00,000) x 100 = **18.4%**

(ii) Cost of Long Term Debt = 15% (1-0.4) = 9%

Revised Ke = $\frac{18}{72} + 0.05$ = 30%

Calculation of WACC after expansion taking book value weights

Capital	Amount	Weights	Cost	W.C
Equity Share Capital	30,00,000	0.3750	30%	11.25%
Preference Share Capital	10,00,000	0.1250	8%	1.00%
Debenture	10,00,000	0.1250	9.02%	1.13%
Long Term Debt	30,00,000	0.3750	9.00%	3.38%
	80,00,000	1.0000		**16.76%**

Alternative presentation

(i) Computation of WACC on book value weights after expansion

Source (1)	Book value (₹) (2)	Weight (3)	Cost of capital (%) (4)	Product (2) x (4)
Equity share capital	30,00,000	0.375	30	9,00,000
Preference share capital	10,00,000	0.125	8	80,000
Debentures	10,00,000	0.125	9.02	90,200
Long term loan	30,00,000	0.375	9	2,70,000
Total	**80,00,000**	**1.00**		**13,40,200**

WACC = (Product / Total book value) x 100 = (13,40,200 / 80,00,000) x 100 **= 16.76%**

Question 5

Four years ago, Z Ltd. had purchased a machine of ₹ 4,80,000 having estimated useful life of 8 years with zero salvage value. Depreciation is charged using SLM method over the useful life. The company want to replace this machine with a new machine. Details of new machine are as below:

- *Cost of new machine is ₹ 12,00,000, Vendor of this machine is agreed to take old machine at a value of ₹ 2,40,000. Cost of dismantling and removal of old machine will be ₹ 40,000. 80% of net purchase price will be paid on spot and remaining will be paid at the end of one year.*
- *Depreciation will be charged @ 20% p.a. under WDV method.*
- *Estimated useful life of new machine is four years and it has salvage value of ₹ 1,00,000 at the end of year four.*
- *Incremental annual sales revenue is ₹ 12,25,000.*
- *Contribution margin is 50%.*
- *Incremental indirect cost (excluding depreciation) is ₹ 1,18,750 per year.*
- *Additional working capital of ₹ 2,50,000 is required at the beginning of year and ₹ 3,00,000 at the beginning of year three. Working capital at the end of year four will be nil.*
- *Tax rate is 30%.*
- *Ignore tax on capital gain.*

Z Ltd. will not make any additional investment, if it yields less than 12%

Advice, whether existing machine should be replaced or not.

Year	*1*	*2*	*3*	*4*	*5*
$PVIF_{0.12, t}$	*0.893*	*0.797*	*0.712*	*0.636*	*0.567*

(10 Marks)

Answer

Working Notes:

(i) Calculation of Net Initial Cash Outflow

Particulars	₹
Cost of New Machine	12,00,000
Less: Sale proceeds of existing machine	2,00,000
Net Purchase Price	10,00,000
Paid in year 0	8,00,000
Paid in year 1	2,00,000

(ii) Calculation of Additional Depreciation

Year	1	2	3	4
	₹	₹	₹	₹
Opening WDV of machine	10,00,000	8,00,000	6,40,000	5,12,000
Depreciation on new machine @ 20%	2,00,000	1,60,000	1,28,000	1,02,400
Closing WDV	8,00,000	6,40,000	5,12,000	4,09,600
Depreciation on old machine (4,80,000/8)	60,000	60,000	60,000	60,000
Incremental depreciation	**1,40,000**	**1,00,000**	**68,000**	**42,400**

(iii) Calculation of Annual Profit before Depreciation and Tax (PBDT)

Particulars	Incremental Values (₹)
Sales	12,25,000
Contribution	6,12,500
Less: Indirect Cost	1,18,750
Profit before Depreciation and Tax (PBDT)	4,93,750

Calculation of Incremental NPV

Year	PVF @ 12%	PBTD (₹)	Incremental Depreciation (₹)	PBT (₹)	Tax @ 30% (₹)	Cash Inflows (₹)	PV of Cash Inflows (₹)
	(1)	(2)	(3)	(4)	(5) = (4) x 0.30	(6) = (4) – (5) + (3)	(7) = (6) x (1)
1	0.893	4,93,750	1,40,000	3,53,750	106,125	3,87,625	3,46,149.125
2	0.797	4,93,750	1,00,000	3,93,750	1,18,125	3,75,625	2,99,373.125
3	0.712	4,93,750	68,000	4,25,750	1,27,725	3,66,025	2,60,609.800
4	0.636	4,93,750	42,400	4,51,350	1,35,405	3,58,345	2,27,907.420
			*			*	**11,34,039.470**
Add: PV of Salvage (₹ 1,00,000 x 0.636)							63,600
Less: **Initial Cash Outflow** - Year 0							**8,00,000**
Year 1 (₹ 2,00,000 × 0.893)							**1,78,600**

Less: Working Capital - Year 0	2,50,000
Year 2 (₹ 3,00,000 × 0.797)	2,39,100
Add: Working Capital released - Year 4 (₹ 5,50,000 × 0.636)	3,49,800
Incremental Net Present Value	**79,739.470**

Since the incremental NPV is positive, existing machine should be replaced.

Alternative Presentation

Computation of Outflow for new Machine:

	₹
Cost of new machine	12,00,000
Replaced cost of old machine	2,40,000
Cost of removal	40,000
Net Purchase price	**10,00,000**
Outflow at year 0	8,00,000
Outflow at year 1	2,00,000

Computation of additional deprecation

Year	**1**	**2**	**3**	**4**
	₹	₹	₹	₹
Opening WDV of machine	10,00,000	8,00,000	6,40,000	5,12,000
Depreciation on new machine @ 20%	2,00,000	1,60,000	1,28,000	1,02,400
Closing WDV	8,00,000	6,40,000	5,12,000	4,09,600
Depreciation on old machine (4,80,000/8)	60,000	60,000	60,000	60,000
Incremental depreciation	**1,40,000**	**1,00,000**	**68,000**	**42,400**

Computation of NPV

	Year	**0**	**1**	**2**	**3**	**4**
		₹	₹	₹	₹	₹
1.	Increase in sales revenue		12,25,000	12,25,000	12,25,000	12,25,000
2.	Contribution		6,12,500	6,12,500	6,12,500	6,12,500
3.	Increase in fixed cost		1,18,750	1,18,750	1,18,750	1,18,750
4.	Incremental Depreciation		1,40,000	1,00,000	68,000	42,400
5.	Net profit before tax [1-(2+3+4)]		3,53,750	3,93,750	4,25,750	4,51,350

6.	Net Profit after tax (5 x 70%)		2,47,625	2,75,625	2,98,025	3,15,945
7.	Add: Incremental depreciation		1,40,000	1,00,000	68,000	42,400
8.	Net Annual cash inflows (6 + 7)		3,87,625	3,75,625	3,66,025	3,58,345
9.	Release of salvage value					1,00,000
10.	(investment)/disinvestment in working capital	(2,50,000)		(3,00,000)		5,50,000
11.	Initial cost	(8,00,000)	(2,00,000)			
12.	Total net cash flows	(10,50,000)	1,87,625.0	75,625	3,66,025	10,08,345
13.	Discounting Factor	1	0.893	0.797	0.712	0.636
14.	Discounted cash flows (12 x 13)	(10,50,000)	1,67,549.125	60,273.125	2,60,609.800	641307.420

NPV = (1,67,549 + 60,273 + 2,60,610 + 6,41,307) - 10,50,000 = **₹ 79,739**

Since the NPV is positive, existing machine should be replaced.

Question 6

(a) List out the conditions, framed by SEBI, which a company needs to fulfil in order to issue of bonus shares. ***(4 Marks)***

(b) "Permanent working capital and fluctuating (temporary) working capital, both are necessary to facilitate production and sales through the operating cycle." - Describe.

(4 Marks)

(c) Briefly explain concept of "Trading on Equity" in financial leverage analysis. ***(2 Marks)***

OR

Discuss features of Secured Premium Notes. ***(2 Marks)***

Answer

(a) To issue Bonus shares, a Company needs to fulfill all the conditions given by Securities Exchange Board of India (SEBI):

(i) As per SEBI, the bonus shares are issued not in lieu of cash dividends.

(ii) A bonus issue should be authorized by Article of Association (AOA) and not to be declared unless all partly paid-up shares have been converted into fully paid-up shares.

(iii) The Company should not have defaulted on re-payment of loan, interest, and any statutory dues.

(iv) Bonus shares are to be issued only from share premium and free reserves and not from capital reserve on account of fixed assets revaluation.

(b) Both kinds of working capital i.e. permanent and fluctuating (temporary) are necessary to facilitate production and sales through the operating cycle:

Permanent working capital refers to the base working capital, which is the minimum level of investment in the current assets that is carried by the entity at all times to carry its day to day activities. It generally stays invested in the business unless the operations are scaled up or down permanently which would also result in increase or decrease in permanent working capital. It is generally financed by long term sources of finance.

Temporary working capital refers to that part of total working capital, which is required by an entity in addition to the permanent working capital. It is also called variable or fluctuating working capital which is used to finance the short-term working capital requirements which arises due to fluctuation in sales volume. For instance, an organization would maintain increased levels of inventory to meet increased seasonal demand.

(c) Financial Leverage as 'Trading on Equity':

Financial leverage indicates the use of funds with fixed cost like long term debts and preference share capital along with equity share capital which is known as trading on equity. The basic aim of financial leverage is to increase the earnings available to equity shareholders using fixed cost fund. A firm is known to have a positive/favourable leverage when its earnings are more than the cost of debt. If earnings are equal to or less than cost of debt, it will be a negative/unfavourable leverage. When the quantity of fixed cost fund is relatively high in comparison to equity capital it is said that the firm is 'trading on equity".

OR

Features of Secured Premium Notes:

- SPN instruments are issued with a detachable warrant.
- These instruments are redeemable after a notified period of say 4 to 7 years.
- No interest is paid during the lock in period.
- The conversion of detachable warrant into equity shares will have to be done within time period notified by the company.

SECTION – B: ECONOMICS FOR FINANCE

*Question No. **7** is compulsory.*

*Answer any **three** from the rest.*

Question 7

(a) The following information relating to a particular financial year of a country is given below:

Particulars	*Amount (₹ in crore)*
Private final consumption expenditure	*1,620*
Government final consumption expenditure	*750*
Net domestic fixed investment	*500*
Export	*400*
Import	*440*
Net Factor Income from Abroad	*20*
Net Indirect Taxes	*100*

You are required to compute the National Income of the country by using Expenditure Method. ***(3 Marks)***

(b) Compute the Reserve Money from the following data relating to 31st March, 2023:

Particulars	*(₹ in crore)*
Currency in Circulation	*28,637*
Bank Deposits with RBI	*5,673*
Post Office Deposits	*400*
Other Deposits with RBI	*210*

(2 Marks)

(c) Explain the differences between Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). ***(3 Marks)***

(d) Describe the name and salient features of the fiscal policy for combating inflationary pressures in the economy. ***(2 Marks)***

Answer

(a) Calculation of National Income Using Expenditure Method

NDP_{MP} = Private Final – Consumption expenditure + Net domestic fixed investment + Govt Final – consumption expenditure + Net exports (Exports–Imports)

= 1,620 + 500 + 750 + (400 – 440)

= 1,620 + 1,250 – 40

= 1,620 + 1,210

NDP_{MP} = ₹ 2,830 cr

NNP_{MP} = NDP_{MP} + Net factor Income from abroad

= 2,830 + 20

NNP_{MP} = ₹ 2,850 cr

NNP_{FC} = National Income = NNP_{MP} – Net Indirect Taxes

= 2,850 – 100

NNP_{FC} = ₹ 2,750 cr

(b) Reserve Money = Currency in-circulation + Banker's deposit within the RBI + Other deposits with RBI

= 28,637 + 5,673 + 210

= **₹ 34,520 cr**

(c) Foreign direct investment is defined as a process whereby the resident of one country (i.e., home country) acquires ownership of an asset in another country (i.e. the host country) and such movement of capital involves ownership, control as well as management of the asset in the host country.

Foreign portfolio investment is the flow of 'financial capital' with stake in a firm at below 10 percent and does not involve manufacture of goods or provision of services, ownership management or control of the asset on the part of the investor.

Foreign direct investment (FDI)	**Foreign portfolio investment (FPI)**
Investment involves **creation of physical assets**	Investment is only in **financial assets**
Has a **long-term interest** and therefore remain invested for long	Only **short-term interest** and generally remain invested for short periods
Relatively **difficult to withdraw**	Relatively **easy to withdraw**
Not inclined to be **speculative**	**Speculative** in nature
Often accompanied by **technology transfer**	**Not** accompanied by **technology transfer**
Direct impact on employment of labour and wages	**No direct impact** on employment of labour and wages

Enduring **interest in management** and control	**No** abiding **interest in management** and control
Securities are held with significant degree of **influence** by the investor **on the management** of the enterprise	Securities are held purely as a financial investment and **no** significant degree of **influence on the management** of the enterprise

(d) Name: Contractionary Fiscal Policy

Contractionary fiscal policy refers to the deliberate policy of government applied to curtail aggregate demand and consequently the level of economic activity. In other words, it is fiscal policy aimed at eliminating an inflationary gap. This is achieved by adopting policy measures that would result in the aggregate demand curve (AD) shifting to the left so the equilibrium may be established at the full employment level of real GDP. This can be achieved either by:

- **Decrease in government spending:** With decrease in government spending, the total amount of money available in the economy is reduced which in turn trim down the aggregate demand.
- **Increase in personal income taxes and/or business taxes:** An increase in personal income taxes reduces disposable incomes leading to fall in consumption spending and aggregate demand. An increase in taxes on business profits reduces the surpluses available to businesses, and as a result, firms' investments shrink causing aggregate demand to fall. Increased taxes also dampen the prospects of profits of potential entrants who will respond by holding back fresh investments.
- A combination of decrease in government spending and increase in personal income taxes and/or business taxes.

Question 8

(a) (i) Following information is related to an economy:

Autonomous consumption	*₹ 1,000 crore*
Marginal propensity to consume	*0.8*
Equilibrium level of income	*₹ 10,000 crore*

You are required to calculate the investment expenditure and consumption expenditure of the economy. ***(3 Marks)***

(ii) Explain the government interventions for combating the market failures due to information problem. ***(2 Marks)***

(b) (i) Compute M1 and M4 from the following data relating to 31st March, 2023:

(₹ in crore)

Notes in circulation	*3,01,78,670*
Circulation of rupee coins	*6,48,902*
Demand deposits with banks	*1,41,31,650*
Time Deposits with Banks	*31,24,276*
Cash in hand with banks	*7,64,130*
Other Deposits with RBI	*3,98,048*
Post Office Savings Deposits	*2,02,684*
Post Office National Savings Certificates (NSCs)	*820*

(3 Marks)

(ii) Describe the exchange rate regime that is commonly used by the countries in real world. ***(2 Marks)***

Answer

(a) (i) Y = C + I

Y = Ca + bY + I

Y – bY = Ca + I

Y (1 – b) = Ca + I

10,000 (1-0.8) = 1000 + I

10,000 x 0.2 = 1000 + I

2000 = 1000 + I

I = ₹ 1000 cr

Y = C + I

C = Y - I = 10,000 – 1000

= ₹ 9000 cr

Investment expenditures = ₹ 1000 cr

Consumption expenditure = ₹ 9000 cr

Alternative presentation

Equilibrium level of income (Y) = ₹ 10,000 crores

Autonomous consumption (a) = ₹ 1,000 Crores

Marginal Propensity to Consume (MPC) = 0.8

C = a + MPC (Y)

Consumption expenditure (C) = 1000 + 0.8 * 10,000 = 1000 + 8000

C = ₹ 9,000 crores

Similarly,

Y = C + I

Investment expenditure (I) = Y – C = 10000 – 9000 = **₹ 1,000 crores**

(ii) 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 labelling** and content disclosures by producers. eg. Labelling on cigarette packets and nutritional information in food packages.
- Mandatory **disclosure of information** 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.

(b) (i) **M_1** = (Notes in circulation + Circulation of rupee coins - Cash in hand with banks) + demand deposit with banking system+ other deposits with RBI

= 30178670 + 648902 – 764130 +14131650+ 398048

M_1 = ₹ 4,45,93,140 cr

M_3 = M_1 + time deposit with the banking system

= 44593140 + 3124276

= **₹ 4,77,17,416 cr**

M_4 = M3 + Total deposits within the Post office savings organisation (excluding National Saving Certificate)

= 47717416+ 202684

M_4 = ₹ 4,79,20,100 cr

(ii) In the real world, there is a spectrum of **'intermediate exchange rate regimes'** which are **either inflexible or have varying degrees of flexibility** that lie in between these two extremes (fixed and flexible). For example, a central bank **can implement soft peg and hard peg policies**. A **soft peg** refers to an **exchange rate policy under which the exchange rate is generally determined by the market**, but in case the exchange rate tends to be move speedily in one direction, the central bank will intervene in the market. With a **hard peg** exchange rate policy, the central bank sets **a fixed and unchanging value for the exchange rate**. Both soft peg and hard peg policy require that the central bank intervenes in the foreign exchange market.

Question 9

(a) (i) Two Countries G and Hare producing Sugar and Steel. The table given below shows the number of labour hours required to produce Sugar and Steel:

Commodity	*Country G*	*Country H*
One Unit of Sugar	*6.0*	*2.0*
One Unit of Steel	*2.5*	*5.0*

(A) Compute the Productivity of labour in both countries in respect of both commodities.

(B) Which country has absolute advantage of production of Steel?

(C) Which country has absolute advantage of production of Sugar? ***(3 Marks)***

(ii) In an economy investment have been increased by ₹ 5,000 crore.

The Marginal Propensity to Consume (MPC) is 0.82. ***(2 Marks)***

You are required to compute the total increase in income and saving in the economy.

(b) (i) Discuss the similarities between Fisher's Transaction approach and Cambridge Cash Balance approach. ***(3 Marks)***

(ii) Explain the following terms:

- *Stagflation*
- *Contagion Effect* ***(2 Marks)***

Answer

(a) (i) (A) Productivity of Labour in both Countries in respect of both commodities

Productivity of Labour	Country G	Country H
Units of Sugar per hour	0.16	0.5
Unit of Steel per hour	0.4	0.2

(B) Country G has absolute advantage in the production of Steel because Productivity of Steel is higher in Country G or Conversely the number of labour hour required to produce Steel in Country G is less compared to Country H.

(C) Country H has absolute advantage in the production of Sugar because productivity of Sugar is higher in Country H or conversely the number of labour hours required to Produce sugar in Country H is less compound to Country G.

(ii) Δ I = **5000**

MPC = **0.82**

Multiplier K = $\frac{1}{1-MPC} = \frac{1}{1-0.82} = \frac{1}{0.18}$ **= 5.55**

MPS = 1 – MPC = 1 – 0.82 **= 0.18**

Increase in Income = $\Delta Y = K \times \Delta I$

= 5.55 x 5000

= **₹ 27,750 cr**

Increase in Saving **=** ΔY x MPS

= 27750 x 0.18

= **₹ 4995 cr**

(b) (i) The Fisher's version and Cambridge version lead to the same conclusion that there is a direct and proportional relationship between the quantity of money and the price level and an inverse proportionate relationship between the quantity of money and the value of money.

The two **approaches almost similar equations**. Fishers' equation P = MV/T is a similar to Robertson's equation P = M/kY. However, the only difference is between the two symbols V and k which are reciprocal to each other. The **difference in the two equations can be reconcile**d by substituting 1/V for K in Robertson's equation and 1/k for V in Fisher's equation.

(ii) Stagflation: A state of affairs in which inflation and unemployment exist side by side.

Or

The combination of recession or stagnation and increasing prices or inflation.

Contagion Effect: The stabilization issue also becomes more complex due to 'contagion effect' whereby the increased international interdependence and financial integration causes forces of instability to get easily transmitted from one country to other countries.

Question 10

(a) (i) Following information relating to a developing country is available to you:

Investment (I)	*₹ 140 crore*
Government Expenditure (G)	*₹ 90 crore*
Export (X)	*₹ 100 crore*
Consumption Function (C) =	*80 + 0.8 Yd (Disposable Income)*
Import (M) =	*50 + 0.09Y (Income)*
Tax (T)	*0.2 Y (Income)*

You are required to:

(A) Find out equilibrium level of income (Y).

(B) Calculate foreign trade multiplier.

(C) Calculate net export if investment is increased by ₹ 30 crore. ***(3 Marks)***

(ii) A customer of a bank deposits ₹ 50,000 in his bank. The bank is required to keep a cash reserve of 20 percent to meet the demand for cash by its depositors.

Calculate the amount of bank deposits the banking system as a whole would generate on the basis of such deposit by the customer. ***(2 Marks)***

(b) (i) Is World Trade Organization (WTO) better than General Agreement on Tariffs and Trade (GATT)? Explain with reasons. ***(3 Marks)***

(ii) Write down the name of the terms used in the analysis of the effect of externalities in the following conditions:

(A) The change in the cost to parties other than the producer or buyer of a good or service due to an additional unit of the good or service.

(B) The change in society's total benefits associated with an additional unit of good or service.

(C) The change in the benefit to parties other than the producer or buyer of a good or service due to an additional unit of the good or service.

(D) The change in society's total cost brought about by an additional unit of a good or service. ***(2 Marks)***

Answer

(a) (i) (A) C = 80 + 0.8 Yd

= 80 + 0.8 (Y – 0.2Y)

Y = 80 + 0.8 (Y – 0.2Y) + 140 + 90 + 100 – 50 – 0.09Y

= 0.55Y + 360

Or Y = ₹ 800 crores

(B) Foreign trade Multiplier = $\frac{1}{1-0.8(1-0.2)+0.09}$

= 1/0.45

Change in I = ₹ 30

(C) If investment is increased by ₹ 30 crores:

ΔY/30 = 1/0.45

ΔY = 66.67

Y = ₹ 866.67 Crores

Net export = 100 – 50-(0.09 x 866.67)

= - ₹ 28 Crores

Alternative

Y = C + I + G + (X – M)

Y = 80 + 0.8 Yd + 140 + 90 (100 – (50 + 0.09Y)

Y = 80 + 0.8 (Y – T) + 140 + 90 (100 – (50 + 0.09 Y)

= 80 + 0.8 (Y – 0.2Y) + 140 + 90 (100 – 50 – 0.09Y)

= 80 + 0.8 (0.8Y) + 140 + 90 (50 – 0.09Y)

= 80 + 0.64 Y + 140 + 4500 – 8.1 Y

Y = 4720 + 0.64Y – 8.1Y

$Y (1 – 0.64 + 8.1) = 4720$

$8.46\ Y = 4720$

$Y = \frac{4720}{8.46}$ = ₹ 557.92 cr

Foreign trade Multiplier = $\frac{1}{1-b+m}$

$= \frac{1}{1-0.8+0.09}$

$= \frac{1}{0.29}$ = **3.45**

Change in I = ₹ 30

Change in Y = $\frac{30}{1-b+m}$

$= \frac{30}{1-0.8+0.09}$

$= \frac{30}{0.29}$ = **₹ 103.45 cr**

Ye = 557.91 + 103.45

= ₹ 661.36 cr

X - M @ Ye = 661.36 = 100 – (50+0.09×661.36)

= 50 + 0.09 x 661.36

= 50 + 59.53

= **₹ 109.53 cr**

(ii) Required reserve ratio, RR = 20%

Spending multiplier = 1/RR = 1/0.2 i.e. 5

Initial change in volume of deposits, ΔD = ₹ 50000

New deposits = (1/RR) x ΔD

= 5 x ₹ 50000

= ₹ **250000**

Alternative

If the Customer A deposit ₹ 50000 in his bank (Bank X), this constitutes the bank current total cash deposits. If the required reserve is 20 percent, the bank would lend ₹ 40000 to B. by lending B ₹ 40000 the bank creates a deposit for ₹ 40000 that B now use. It is as though B owns ₹ 40000. This in turn mean that A can claim against ₹ 50000 while B will have a claim against ₹ 40000. The bank has cash of ₹ 50000 against claim of ₹ 90000. In short, the bank has created ₹ 40000 out of "thin air '" Since ₹ 40000 are not supported by any genuine money. At any time, the fractional reserve commercial banks have more cash liabilities than cash in their vaults. Now B buys good worth ₹ 40000 from c and pays by Cheque. C Places the cheque in bank Y which bank y will lend to D. The Summation will end with an amount which is equivalent to 1/20 % of ₹ 50000 which is equal to ₹ 250000. In this example the Initial deposit is capable of multiplying itself 5 times.

In Short, we find that the fact that banks make use of demand deposits for lending it sets in motion a series of activities leading to expansion of money that is not backed by proper money.

(b) (i) The multilateral trading system, first under the General Agreement on Tariffs and Trade (GATT) and later in the World Trade Organisation (WTO), has reduced unilateral approaches to trade by gradually integrating the majority of the world's countries into our rules- based system. But WTO has proved to be better GATT due to the following reasons.

- WTO dispute resolution is quicker than GATT (disputes have to be solved within 18 months)
- GATT talked only about Goods, but WTO talks about services and intellectual property rights, along with Goods.
- The working of WTO is more transparent.

(ii) A. The change in the cost to parties other than the producer or buyer of a good or service due to an additional unit of the good or service – **Marginal External Cost (MEC)**

B. The Change in society's total benefits associated with an additional unit of good or service –**Marginal Social Benefit (MSB)**

C. The change in the benefit to parties other than the producer or buyer of a good or service due to an additional unit of the good or service – **Marginal External benefit (MEB)**

D. The Change in society's total cost brought about by an additional unit of a good or service - **Marginal Social Cost. (MSC)**

Question 11

(a) (i) Suppose in an economy, government expenditure is increased by ₹ 10 crore and taxes increased by ₹ 5 crore. Spending multiplier of the economy is 5. What impact would such increase have on GDP? ***(3 Marks)***

(ii) Calculate the arbitrage for £2,00,000 from the following details:

£1 = ₹ 100

US$ 1 = ₹ 80

£1 = US $ 1.30 in UK ***(2 Marks)***

(b) (i) Repo injects liquidity into the system whereas the reverse repo absorbs the liquidity from the system. In the light of this statement briefly state the impact of high repo and reverse repo rate on a developing economy. ***(3 Marks)***

(ii) What steps are to be taken by the Government as instruments of trade policy in the following cases?

(A) There is severe shortage of an essential product X in Indian domestic market due to its less production.

(B) The export of product Y is decreasing. continuously due to cost and competition in the international market. ***(2 Marks)***

OR

Describe any two reasons for leakages which are responsible for decline in income.

(2 Marks)

Answer

(a) (i) Spending Multiplier = 1/1-b

5 = 1/1-b

5-5b = 1

b = 4/5 = 0.8

MPC = 0.8

Change in GDP = Initial Change in Government Expenditure × Spending Multiplier

= 10 ×5 = **₹ 50 Cr**

Tax Multiplier = -b/1-b

= -0.8/ 1-0.8

= -0.8/0.2

= **-4**

Decrease in GDP = Initial Change in Tax × 4

= 5 × 4

= **₹ 20 crore**

Net Result is Output increases by 30 crore.

(ii) (a) (ii) Arbitrage gain can be calculated as follows:

Buy US $ in UK market for £ 2,00,000.

Since £1 = US $ 1.30 for £2,00,000 = 2,00,000 x 1.3 = **$2,60,000**

So, total US $ in Indian market

US 4 2,60,000 x 80 = **₹ 2,08,00,000**

Purchasing £ in Indian market for ₹ 2,08,00,000

2,08,00,000/100 = **£2,08,000**

Hence the arbitrage gain is **£8000**

(b) (i) The RBI uses the single independent 'policy rate' which is the repo rate (in the LAF window) for balancing liquidity. The policy rate is in fact, the key lending rate of the central bank in a country. A change in the policy rate gets transmitted through the money market to the entire the financial system and alters all other short term interest rates in the economy, thereby influencing aggregate demand – a key determinant of the level of inflation and economic growth. If the RBI wants to make it more expensive for banks to borrow money, it increases the repo rate. Similarly, if it wants to make it cheaper for banks to borrow money, it reduces the repo rate. In other words, an increase in the repo rate will lead to liquidity tightening and vice-versa, other things remaining constant. The cost of funds increases from commercial banks hence loans become more expensive.

It is a monetary policy instrument and in effect it absorbs the liquidity from the system. This operation takes place when the RBI borrows money from commercial banks by selling them securities (which RBI permits) with an agreement to repurchase the securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed. The interest rate paid by the RBI for such borrowings is called the "Reverse Repo Rate". Thus, reverse repo rate is the rate of interest paid by the RBI on its borrowings from commercial banks. In case of reverse repo, the money supply in the economy decreases as the commercial banks parks more funds with the RBI.

(ii) (A) Ban on exports or export restriction:

During the period of shortage of product X the government restricted the export of product X to make the supply in domestic market. It is export related measure of trade policy.

During periods of shortages, export of product X may be prohibited to make them available for domestic consumption. Export restrictions have an important effect on international markets. By reducing international supply, export restrictions have been effective in increasing international prices.

(B) Export subsidies and Incentives: To encourage the export of product Y the government provides subsidy, grant, loans, duty free access etc. It is also and export related measure.

Or

There are two flows out of the household sector in addition to consumption expenditure namely, saving flow and the flow of tax payments to the government. These are leakages. The saving leakage flows into financial markets, which means that the part of that is saved is held in the form of some financial asset (currency, bank deposits, bonds, equities, etc.). The tax flow goes to the government sector. The leakages which occur in household sector do not necessarily mean that the total demand must fall short of output. There are additional demands for output on the part of the business sector itself for investment and from the government sector. In terms of the circular flow, these are injections. The investment injection is shown as a flow from financial markets to the business sector. The purchasers of the investment goods, typically financed by borrowing, are actually the firms in the business sector themselves. Thus, the amount of investment in terms of money represents an equivalent flow of funds lent to the business sector.