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) *Current annual sale of SKD Ltd. is ₹ 360 lakhs. It's directors are of the opinion that company's current expenditure on receivables management is too high and with a view to reduce the expenditure they are considering following two new alternate credit policies:*

	Policy X	Policy Y
Average collection period	1.5 months	1 month
% of default	2%	1%
Annual collection expenditure	₹ 12 lakh	₹ 20 lakh

Selling price per unit of product is ₹ 150. Total cost per unit is ₹ 120.

Current credit terms are 2 months and percentage of default is 3%.

Current annual collection expenditure is ₹ 8 lakh. Required rate of return on investment of SKD Ltd. is 20%. Determine which credit policy SKD Ltd. should follow. ***(5 Marks)***

(b) *The details about two companies R Ltd. and S Ltd. having same operating risk are given below:*

Particulars	R Ltd.	S Ltd.
Profit before interest and tax	₹ 10 lakhs	₹ 10 lakhs
Equity share capital ₹ 10 each	₹ 17 lakhs	₹ 50 lakhs
Long term borrowings @ 10%	₹ 33 lakhs	-
Cost of Equity (K_e)	18%	15%

You are required to:

(1) *Calculate the value of equity of both the companies on the basis of M.M. Approach without tax.*

(2) *Calculate the Total Value of both the companies on the basis of M.M. Approach without tax.* ***(5 Marks)***

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(c) *K.P. Ltd. is investing ₹ 50 lakhs in a project. The life of the project is 4 years. Risk free rate of return is 6% and risk premium is 6%, other information is as under:*

Sales of 1st year	*₹ 50 lakhs*
Sales of 2nd year	*₹ 60 lakhs*
Sales of 3rd year	*₹ 70 lakhs*
Sales of 4th year	*₹ 80 lakhs*
P/V Ratio (same in all the years)	*50%*
Fixed Cost (Excluding Depreciation) of 1st year	*₹ 10 lakhs*
Fixed Cost (Excluding Depreciation) of 2nd year	*₹ 12 lakhs*
Fixed Cost (Excluding Depreciation) of 3rd year	*₹ 14 lakhs*
Fixed Cost (Excluding Depreciation) of 4th year	*₹ 16 lakhs*

Ignoring interest and taxes,

You are required to calculate NPV of given project on the basis of Risk Adjusted Discount Rate.

Discount factor @ 6% and 12% are as under:

Year	*1*	*2*	*3*	*4*
Discount Factor @ 6%	*0.943*	*0.890*	*0.840*	*0.792*
Discount Factor@ 12%	*0.893*	*0.797*	*0.712*	*0.636*

(5 Marks)

(d) *The following information relates to LMN Ltd.*

Earning of the company	*₹ 30,00,000*
Dividend pay-out ratio	*60%*
No. of shares outstanding	*5,00,000*
Rate of return on investment	*15%*
Equity capitalized rate	*13%*

Required:

(i) *Determine what would be the market value per share as per Walter's model.*

(ii) *Compute optimum dividend pay-out ratio according to Walter's model and the market value of company's share at that pay-out ratio.* ***(5 Marks)***

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Answer

(a) Statement showing the Evaluation of Credit policies (Total Approach)

Particulars		Present Policy (2 Months)	Proposed Policy X (1.5 Months)	Proposed Policy Y (1 Month)
		₹ in lakhs	₹ in lakhs	₹ in lakhs
A.	**Expected Profit:**			
	(a) Credit Sales*	360	360	360
	(b) Total Cost other than Bad Debts and collection expenditure (360/150 x 120)	288	288	288
	(c) Bad Debts	10.8 (360 x 0.03)	7.2 (360 x 0.02)	3.6 (360 x 0.01)
	(d) Collection expenditure	8	12	20
	(e) Expected Profit [(a) – (b) – (c) - (d)]	53.2	52.8	48.4
B.	**Opportunity Cost of Investments in Receivables (Working Note)**	9.6	7.2	4.8
C.	**Net Benefits (A – B)**	43.6	45.6	43.6

Recommendation: The Proposed Policy X should be followed since the net benefits under this policy are higher as compared to other policies.

***Note:** It is assumed that all sales are on credit.

Working Note:

Calculation of Opportunity Cost of Average Investments

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Collection period}}{12} \times \frac{\text{Rate of Return}}{100}$$

$$\text{Present Policy} = ₹\ 288 \text{ lakhs} \times \frac{2}{12} \times \frac{20}{100} = ₹\ 9.6 \text{ lakhs}$$

$$\text{Policy X} = ₹\ 288 \text{ lakhs} \times \frac{1.5}{12} \times \frac{20}{100} = ₹\ 7.2 \text{ lakhs}$$

$$\text{Policy Y} = ₹\ 288 \text{ lakhs} \times \frac{1}{12} \times \frac{20}{100} = ₹\ 4.8 \text{ lakhs}$$

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Alternatively

Statement showing the Evaluation of Credit policies (Incremental Approach)

Particulars		Present Policy (2 Months)	Proposed Policy X (1.5 Months)	Proposed Policy Y (1 Month)
		₹ in lakhs	₹ in lakhs	₹ in lakhs
	(a) Credit Sales*	360	360	360
	(b) Cost of sales (360/150 x 120)	288	288	288
	(c) Receivables (Refer Working Note)	48	36	24
	(d) Reduction in receivables from present policy	-	12	24
(A)	**Savings in Opportunity Cost of Investment in Receivables (@ 20%)**	**-**	**2.4**	**4.8**
	(e) Bad Debts	10.8 (360 x 0.03)	7.2 (360 x 0.02)	3.6 (360 x 0.01)
(B)	**Reduction in bad debts from present policy**	**-**	**3.6**	**7.2**
	(f) Collection expenditure	8	12	20
(C)	**Increase in Collection expenditure from Present policy**	**-**	**4**	**12**
(D)	**Net Benefits (A +B-C)**		2	0

Recommendation: The Proposed Policy X should be followed since the net benefits under this policy are higher as compared to other policies.

***Note:** It is assumed that all sales are on credit.

Working Note:

Calculation of Investment in Receivables

$$= \text{Total Cost} \times \frac{\text{Collection period}}{12}$$

Present Policy $= ₹ 288 \text{ lakhs} \times \frac{2}{12} = ₹ 48 \text{ lakhs}$

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Policy X = ₹ 288 lakhs × $\frac{1.5}{12}$ = ₹ 36 lakhs

Policy Y = ₹ 288 lakhs × $\frac{1}{12}$ = ₹ 24 lakhs

(b) (1) Computation of value of equity on the basis of MM approach without tax

Particulars	R Ltd. (₹ in lakhs)	S Ltd. (₹ in lakhs)
Profit before interest and taxes	10	10
Less: Interest on debt (10% × ₹ 33,00,000)	3.3	-
Earnings available to Equity shareholders	6.7	10
K_e	18%	15%
Value of Equity (Earnings available to Equity shareholders/K_e)	**37.222**	**66.667**

(2) Computation of total value on the basis of MM approach without tax

Particulars	R Ltd. (₹ in lakhs)	S Ltd. (₹ in lakhs)
Value of Equity (S) (as calculated above)	37.222	66.667
Debt (D)	33	-
Value of Firm (V) = S + D	**70.222**	**66.667**

(c) Calculation of Cash Flow

Year	Sales (₹ in Lakhs) (A)	P/V ratio (B)	Contribution (₹ in Lakhs) (C) = (A x B)	Fixed Cost (₹ in Lakhs) (D)	Cash Flows (₹ in lakhs) (E) = (C – D)
1	50	50%	25	10	15
2	60	50%	30	12	18
3	70	50%	35	14	21
4	80	50%	40	16	24

When risk-free rate is 6% and the risk premium expected is 6%, then risk adjusted discount rate would be 6% + 6% =12%.

Calculation of NPV using Risk Adjusted Discount Rate (@ 12%)

Year	Cash flows (₹ in Lakhs)	Discounting Factor @ 12%	Present Value of Cash Flows (₹ in lakhs)
1	15	0.893	13.395
2	18	0.797	14.346

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3	21	0.712	14.952
4	24	0.636	15.264
Total of present value of Cash flow			57.957
Less: Initial Investment			50.000
Net Present value (NPV)			**7.957**

(d) (i) Calculation of market value per share as per Walter's model

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

Where,

P = Market price per share.

E = Earnings per share = ₹ 30,00,000/5,00,000 = ₹ 6

D = Dividend per share = ₹ 6 x 0.60 = ₹ 3.6

r = Return earned on investment = 15%

K_e = Cost of equity capital = 13%

$$P = \frac{3.6 + \frac{0.15}{0.13}(6 - 3.6)}{0.13} = ₹ 49$$

(ii) According to Walter's model, when the return on investment (r) is more than the cost of equity capital (K_e), the price per share increases as the dividend pay-out ratio decreases. Hence, the optimum dividend pay-out ratio in this case is nil.

So, at a pay-out ratio of zero, the market value of the company's share will be:

$$P = \frac{0 + \frac{0.15}{0.13}(6 - 0)}{0.13} = ₹ 53.254$$

Question 2

Following are the information of TT Ltd.:

Particulars	
Earnings per share	*₹ 10*
Dividend per share	*₹ 6*
Expected growth rate in Dividend	*6%*
Current market price per share	*₹ 120*

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Tax Rate	*30%*
Requirement of Additional Finance	*₹ 30 lakhs*
Debt Equity Ratio (For additional finance)	*2:1*
Cost of Debt	
0-5,00,000	*10%*
5,00,001 - 10,00,000	*9%*
Above 10,00,000	*8%*

Assuming that there is no Reserve and Surplus available in TT Ltd.

You are required to:

(a) Find the pattern of finance for additional requirement

(b) Calculate post tax average cost of additional debt

(c) Calculate cost of equity

(d) Calculate the overall weighted average after tax cost of additional finance. ***(10 Marks)***

Answer

(a) Pattern of raising additional finance

Equity	1/3 of ₹ 30,00,000	= ₹ 10,00,000
Debt	2/3 of ₹ 30,00,000	= ₹ 20,00,000

The capital structure after raising additional finance:

Particulars		**(₹)**
Shareholder's Funds		
Equity Capital		10,00,000
Debt (Interest at 10% p.a.)		5,00,000
(Interest at 9% p.a.)		5,00,000
(Interest at 8% p.a.)	(20,00,000–10,00,000)	10,00,000
Total Funds		**30,00,000**

(b) Determination of post-tax average cost of additional debt

$K_d = I (1 – t)$

Where,

I = Interest Rate

t = Corporate tax-rate

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On First ₹ 5,00,000 = 10% (1 – 0.3) = 7% or 0.07

On Next ₹ 5,00,000 = 9% (1 – 0.3) = 6.3% or 0.063

On Next ₹ 10,00,000 = 8% (1 – 0.3) = 5.6% or 0.056

Average Cost of Debt

$$= \frac{(₹\ 5,00,000 \times 0.07) + (₹\ 5,00,000 \times 0.063) + (₹\ 10,00,000 \times 0.056)}{₹\ 20,00,000} \times 100 = \textbf{6.125\%}$$

(c) Determination of cost of equity applying Dividend growth model:

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

Where,

K_e = Cost of equity

D_1 = $D_0 (1+ g)$

D_0 = Dividend paid

g = Growth rate = 6%

P_0 = Current market price per share = ₹ 120

$$K_e = \frac{₹\ 6(1+0.06)}{₹\ 120} + 0.06 = \frac{₹\ 6.36}{₹\ 120} + 0.06 = \textbf{0.113 or 11.3\%}$$

(d) Computation of overall weighted average after tax cost of additional finance

Particulars	(₹)	Weights	Cost of funds	Weighted Cost (%)
Equity	10,00,000	1/3	11.3%	3.767
Debt	20,00,000	2/3	6.125%	4.083
WACC	30,00,000			**7.85**

(Note: In the above solution different interest rate have been considered for different slab of Debt)

Alternative Solution

(a) Pattern of raising additional finance

Equity	1/3 of ₹ 30,00,000	= ₹ 10,00,000
Debt	2/3 of ₹ 30,00,000	= ₹ 20,00,000

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The capital structure after raising additional finance:

Particulars	(₹)
Shareholders' Funds	
Equity Capital	10,00,000
Debt (Interest at 8% p.a.)	20,00,000
Total Funds	**30,00,000**

(b) Determination of post-tax average cost of additional debt

$K_d = I (1 – t)$

Where,

I = Interest Rate

t = Corporate tax-rate

K_d = 8% (1 – 0.3) = 5.6%

(c) Determination of cost of equity applying Dividend growth model:

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

Where,

K_e = Cost of equity

$D_1 = D_0 (1+ g)$

D_0 = Dividend paid

g = Growth rate =6%

P_0 = Current market price per share = ₹ 120

Then, $K_e = \frac{₹ 6(1+0.06)}{₹ 120} + 0.06 = \frac{₹ 6.36}{₹ 120} + 0.06$ = **0.113 or 11.3%**

(d) Computation of overall weighted average after tax cost of additional finance

Particulars	(₹)	Weights	Cost of funds	Weighted Cost (%)
Equity	10,00,000	1/3	11.3%	3.767
Debt	20,00,000	2/3	5.6%	3.733
WACC	30,00,000			**7.50**

(Note: In the above solution single interest rate have been considered for Debt)

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Question 3

Masco Limited has furnished the following ratios and information relating to the year ended 31st March 2021:

Sales	*₹ 75,00,000*
Return on net worth	*25%*
Rate of income tax	*50%*
Share capital to reserves	*6:4*
Current ratio	*2.5*
Net profit to sales (After Income Tax)	*6.50%*
Inventory turnover (based on cost of goods sold)	*12*
Cost of goods sold	*₹ 22,50,000*
Interest on debentures	*₹ 75,000*
Receivables (includes debtors ₹ 1,25,000)	*₹ 2,00,000*
Payables	*₹ 2,50,000*
Bank Overdraft	*₹ 1,50,000*

You are required to:

(a) Calculate the operating expenses for the year ended 31st March, 2021.

(b) Prepare a balance sheet as on 31st March in the following format:

Liabilities	*₹*	*Assets*	*₹*
Share Capital		*Fixed Assets*	
Reserves and Surplus		*Current Assets*	
15% Debentures		*Stock*	
Payables		*Receivables*	
Bank Term Loan		*Cash*	

(10 Marks)

Answer

(a) Calculation of Operating Expenses for the year ended 31st March, 2021

Particulars		**(₹)**
Net Profit [@ 6.5% of Sales]		4,87,500
Add: Income Tax (@ 50%)		4,87,500
Profit Before Tax (PBT)		9,75,000

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Add: Debenture Interest		75,000
Profit before interest and tax (PBIT)		10,50,000
Sales		75,00,000
Less: Cost of goods sold	22,50,000	
PBIT	10,50,000	33,00,000
Operating Expenses		42,00,000

(b) Balance Sheet as on 31st March, 2021

Liabilities	₹	Assets	₹
Share Capital	11,70,000	Fixed Assets	18,50,000
Reserve and Surplus	7,80,000	Current Assets	
15% Debentures	5,00,000	Stock	1,87,500
Payables	2,50,000	Receivables	2,00,000
Bank Overdraft(or Bank Term Loan)	1,50,000	Cash	6,12,500
	28,50,000		28,50,000

Working Notes:

(i) **Calculation of Share Capital and Reserves**

The return on net worth is 25%. Therefore, the profit after tax of ₹ 4,87,500 should be equivalent to 25% of the net worth.

$$\text{Net worth} \times \frac{25}{100} = ₹\ 4,87,500$$

$$\therefore \text{ Net worth} = \frac{₹\ 4,87,500 \times 100}{25} = ₹\ 19,50,000$$

The ratio of share capital to reserves is 6:4

Share Capital = 19,50,000 x 6/10 = ₹ 11,70,000

Reserves = 19,50,000 x 4/10 = ₹ 7,80,000

(ii) **Calculation of Debentures**

Interest on Debentures @ 15% (as given in the balance sheet format) = ₹ 75,000

$$\therefore \text{ Debentures} = \frac{75,000 \times 100}{15} = ₹\ 5,00,000$$

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(iii) **Calculation of Current Assets**

Current Ratio = 2.5

Payables = ₹ 2,50,000

Bank overdraft = ₹ 1,50,000

Total Current Liabilities = ₹ 2,50,000 + ₹ 1,50,000 = ₹ 4,00,000

∴ Current Assets = 2.5 x Current Liabilities = 2.5 × 4,00,000 = ₹ 10,00,000

(iv) **Calculation of Fixed Assets**

Particulars	₹
Share capital	11,70,000
Reserves	7,80,000
Debentures	5,00,000
Payables	2,50,000
Bank Overdraft	1,50,000
Total Liabilities	28,50,000
Less: Current Assets	10,00,000
Fixed Assets	18,50,000

(v) **Calculation of Composition of Current Assets**

Inventory Turnover = 12

$$\frac{\text{Cost of goods sold}}{\text{Closing stock}} = 12$$

Closing stock = $\frac{₹\ 22,50,000}{12}$ = Closing stock = ₹ 1,87,500

Particulars	₹
Stock	1,87,500
Receivables	2,00,000
Cash (balancing figure)	6,12,500
Total Current Assets	10,00,000

Question 4

An existing company has a machine which has been in operation for two years, its estimated remaining useful life is 4 years with no residual value in the end. Its current market value is ₹3 lakhs. The management is considering a proposal to purchase an improved model of a machine gives increase output. The details are as under:

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Particulars	*Existing Machine*	*New Machine*
Purchase Price	*₹ 6,00,000*	*₹ 10,00,000*
Estimated Life	*6 years*	*4 years*
Residual Value	*0*	*0*
Annual Operating days	*300*	*300*
Operating hours per day	*6*	*6*
Selling price per unit	*₹ 10*	*₹ 10*
Material cost per unit	*₹ 2*	*₹ 2*
Output per hour in units	*20*	*40*
Labour cost per hour	*₹ 20*	*₹ 30*
Fixed overhead per annum excluding depreciation	*₹ 1,00,000*	*₹ 60,000*
Working Capital	*₹ 1,00,000*	*₹ 2,00,000*
Income-tax rate	*30%*	*30%*

Assuming that - cost of capital is 10% and the company uses written down value of depreciation @ 20% and it has several machines in 20% block.

Advice the management on the Replacement of Machine as per the NPV method.

The discounting factors table given below:

Discounting Factors	*Year 1*	*Year 2*	*Year 3*	*Year 4*
10%	*0.909*	*0.826*	*0.751*	*0.683*

(10 Marks)

Answer

(i) Calculation of Net Initial Cash Outflows:

Particulars	**₹**
Purchase Price of new machine	10,00,000
Add: Net Working Capital	1,00,000
Less: Sale proceeds of existing machine	3,00,000
Net initial cash outflows	8,00,000

(ii) Calculation of annual Profit Before Tax and depreciation

Particulars	**Existing machine**	**New Machine**	**Differential**
(1)	**(2)**	**(3)**	**(4) = (3) – (2)**
Annual output	36,000 units	72,000 units	36,000 units

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		₹	₹	₹
(A)	Sales revenue @ ₹ 10 per unit	3,60,000	7,20,000	3,60,000
(B)	Cost of Operation			
	Material @ ₹ 2 per unit	72,000	1,44,000	72,000
	Labour			
	Old = 1,800 × ₹ 20	36,000		
	New = 1,800 × ₹ 30		54,000	18,000
	Fixed overhead excluding depreciation	1,00,000	60,000	(40,000)
	Total Cost (B)	2,08,000	2,58,000	50,000
Profit Before Tax and depreciation (PBTD) (A – B)		**1,52,000**	**4,62,000**	**3,10,000**

(iii) Calculation of Net Present value on replacement of machine

Year	PBTD	Depreciation @ 20% WDV	PBT	Tax @ 30%	PAT	Net cash flow	PVF @ 10%	PV
(1)	(2)	(3)	(4 = 2-3)	(5)	(6 = 4-5)	(7 = 6 + 3)	(8)	(9 = 7 x 8)
1	3,10,000	1,40,000	1,70,000	51,000	1,19,000	2,59,000	0.909	2,35,431.000
2	3,10,000	1,12,000	1,98,000	59,400	1,38,600	2,50,600	0.826	2,06,995.600
3	3,10,000	89,600	2,20,400	66,120	1,54,280	2,43,880	0.751	1,83,153.880
4	3,10,000	71,680	2,38,320	71,496	1,66,824	2,38,504	0.683	1,62,898.232
								7,88,478.712
Add: Release of net working capital at year end 4 (1,00,000 x 0.683)								68,300.000
Less: Initial Cash Outflow								8,00,000.000
NPV								**56,778.712**

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

Working Notes:

1. Calculation of Annual Output

Annual output = (Annual operating days x Operating hours per day) x output per hour

Existing machine = (300 x 6) x 20 = 1,800 x 20 = 36,000 units

New machine = (300 x 6) x 40 = 1,800 x 40 = 72,000 units

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2. Base for incremental depreciation

Particulars		₹
WDV of Existing Machine		
Purchase price of existing machine		6,00,000
Less: Depreciation for year 1	1,20,000	
Depreciation for Year 2	96,000	2,16,000
WDV of Existing Machine (i)		**3,84,000**
Depreciation base of New Machine		
Purchase price of new machine		10,00,000
Add: WDV of existing machine		3,84,000
Less: Sales value of existing machine		3,00,000
Depreciation base of New Machine (ii)		**10,84,000**
Base for incremental depreciation [(ii) – (i)]		**7,00,000**

(Note: The above solution have been done based on incremental approach)

Alternatively, solution can be done based on Total Approach as below:

(i) Calculation of depreciation:

Existing Machine						
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Opening balance	6,00,000	4,80,000	3,84,000	3,07,200	2,45,760	1,96,608.00
Less: Depreciation @ 20%	1,20,000	96,000	76,800	61,440	49,152	39,321.60
WDV	4,80,000	3,84,000	3,07,200	2,45,760	1,96,608	1,57,286.40

New Machine				
	Year 1	**Year 2**	**Year 3**	**Year 4**
Opening balance	**10,84,000***	8,67,200	6,93,760	5,55,008.00
Less: Depreciation @ 20%	**2,16,800**	**1,73,440**	**1,38,752**	**1,11,001.60**
WDV	8,67,200	6,93,760	5,55,008	4,44,006.40

***** As the company has several machines in 20% block, the value of Existing Machine from the block calculated as below shall be added to the new machine of ₹ 10,00,000:

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WDV of existing machine at the beginning of the year	₹ 3,84,000
Less: Sale Value of Machine	₹ 3,00,000
WDV of existing machine in the block	₹ 84,000

Therefore, opening balance for depreciation of block = ₹ 10,00,000 + ₹ 84,000 = ₹ 10,84,000

(ii) Calculation of annual cash inflows from operation:

Particulars	EXISTING MACHINE			
	Year 3	**Year 4**	**Year 5**	**Year 6**
Annual output (300 operating days x 6 operating hours x 20 output per hour)	**36,000 units**	**36,000 units**	**36,000 units**	**36,000 units**
	₹	**₹**	**₹**	**₹**
(A) **Sales revenue @ ₹ 10 per unit**	**3,60,000.00**	**3,60,000.00**	**3,60,000.00**	**3,60,000.00**
(B) Less: Cost of Operation				
Material @ ₹ 2 per unit	72,000.00	72,000.00	72,000.00	72,000.00
Labour @ ₹ 20 per hour for (300 x 6) hours	36,000.00	36,000.00	36,000.00	36,000.00
Fixed overhead	1,00,000.00	1,00,000.00	1,00,000.00	1,00,000.00
Depreciation	76,800.00	61,440.00	49,152.00	39,321.60
Total Cost (B)	**2,84,800.00**	**2,69,440.00**	**2,57,152.00**	**2,47,321.60**
Profit Before Tax (A – B)	75,200.00	90,560.00	1,02,848.00	1,12,678.40
Less: Tax @ 30%	22,560.00	27,168.00	30,854.40	33,803.52
Profit After Tax	**52,640.00**	**63,392.00**	**71,993.60**	**78,874.88**
Add: Depreciation	76,800.00	61,440.00	49,152.00	39,321.60
Add: Release of Working Capital				1,00,000.00
Annual Cash Inflows	**1,29,440.00**	**1,24,832.00**	**1,21,145.60**	**2,18,196.48**

Particulars	NEW MACHINE			
	Year 1	**Year 2**	**Year 3**	**Year 4**
Annual output (300 operating days x 6 operating hours x 40 output per hour)	**72,000 units**	**72,000 units**	**72,000 units**	**72,000 units**
	₹	**₹**	**₹**	**₹**
(A) **Sales revenue @ ₹ 10 per unit**	**7,20,000.00**	**7,20,000.00**	**7,20,000.00**	**7,20,000.00**

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(B) Less: Cost of Operation				
Material @ ₹ 2 per unit	1,44,000.00	1,44,000.00	1,44,000.00	1,44,000.00
Labour @ ₹ 30 per hour for (300 x 6) hours	54,000.00	54,000.00	54,000.00	54,000.00
Fixed overhead	60,000.00	60,000.00	60,000.00	60,000.00
Depreciation	2,16,800.00	1,73,440.00	1,38,752.00	1,11,001.60
Total Cost (B)	**4,74,800.00**	**4,31,440.00**	**3,96,752.00**	**3,69,001.60**
Profit Before Tax (A – B)	2,45,200.00	2,88,560.00	3,23,248.00	3,50,998.40
Less: Tax @ 30%	73,560.00	86,568.00	96,974.40	1,05,299.52
Profit After Tax	1,71,640.00	2,01,992.00	2,26,273.60	2,45,698.88
Add: Depreciation	2,16,800.00	1,73,440.00	1,38,752.00	1,11,001.60
Add: Release of Working Capital				2,00,000.00
Annual Cash Inflows	**3,88,440.00**	**3,75,432.00**	**3,65,025.60**	**5,56,700.48**

(iii) Calculation of Incremental Annual Cash Flow:

Particulars	Year 1 (₹)	Year 2 (₹)	Year 3 (₹)	Year 4 (₹)
Existing Machine (A)	1,29,440.00	1,24,832.00	1,21,145.60	2,18,196.48
New Machine (B)	3,88,440.00	3,75,432.00	3,65,025.60	5,56,700.48
Incremental Annual Cash Flow (B – A)	2,59,000.00	2,50,600.00	2,43,880.00	3,38,504.00

(iv) Calculation of Net Present Value on replacement of machine:

Year	Incremental Annual Cash Flow (₹) (A)	Discounting factor @ 10% (B)	Present Value of Incremental Annual Cash Flow (₹) (A x B)
1	2,59,000.00	0.909	2,35,431.000
2	2,50,600.00	0.826	2,06,995.600
3	2,43,880.00	0.751	1,83,153.880
4	3,38,504.00	0.683	2,31,198.232
Total Incremental Inflows			**8,56,778.712**
Less: Net Initial Cash Outflows (Working note)			8,00,000.000
Incremental NPV			**56,778.712**

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

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Working Note:

Calculation of Net Initial Cash Outflows:

Particulars	₹
Cost of new machine	10,00,000
Less: Sale proceeds of existing machine	3,00,000
Add: incremental working capital required (₹ 2,00,000 – ₹ 1,00,000)	1,00,000
Net initial cash outflows	**8,00,000**

Question 5

A company had the following balance sheet as on 31st March, 2021:

Liabilities	*₹ in Crores*	*Assets*	*₹ in Crores*
Equity Share Capital (75 lakhs Shares of ₹ 10 each)	*7.50*	*Building*	*12.50*
Reserves and Surplus	*1.50*	*Machinery*	*6.25*
15% Debentures	*15.00*	*Current Assets*	
Current Liabilities	*6.00*	*Stock*	*3.00*
		Debtors	*3.25*
		Bank Balance	*5.00*
	30.00		*30.00*

The additional information given is as under:

Fixed cost per annum (excluding interest)	*₹ 6 crores*
Variable operating cost ratio	*60%*
Total assets turnover ratio	*2.5*
Income-tax rate	*40%*

Calculate the following and comment:

(i) Earnings per share

(ii) Operating Leverage

(iii) Financial Leverage

(iv) Combined Leverage ***(10 Marks)***

Answer

Total Assets	= ₹ 30 crores
Total Asset Turnover Ratio	= 2.5
Hence, Total Sales	= 30 × 2.5 = ₹ 75 crores

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Computation of Profit after Tax (PAT)

Particulars	(₹ in crores)
Sales	75.00
Less: Variable Operating Cost @ 60%	45.00
Contribution	30.00
Less: Fixed Cost (other than Interest)	6.00
EBIT/PBIT	24.00
Less: Interest on Debentures (15% × 15)	2.25
EBT/PBT	21.75
Less: Tax @ 40%	8.70
EAT/ PAT	13.05

(i) Earnings per Share

$$EPS = \frac{PAT}{\text{Number of Equity Shares}} = \frac{13.05}{0.75} = ₹\ 17.40$$

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

(ii) Operating Leverage

$$\text{Operating Leverage} = \frac{\text{Contribution}}{EBIT} = \frac{30}{24} = 1.25$$

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

(iii) Financial Leverage

$$\text{Financial Leverage} = \frac{EBIT}{PBT} = \frac{24}{21.75} = 1.103$$

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

(iv) Combined Leverage

$$\text{Combined Leverage} = \frac{\text{Contribution}}{PBT} = \frac{30}{21.75} = 1.379$$

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Or,

= Operating Leverage × Financial Leverage

= 1.25 × 1.103 = 1.379

The combined leverage studies the choice of fixed cost in cost structure and choice of debt in capital structure. It studies how sensitive the change in EPS is vis-à-vis change in sales. The leverages operating, financial and combined are used as measurement of risk.

Question 6

(a) Explain in brief the forms of Post Shipment Finance. ***(4 Marks)***

(b) Describe the salient features of FORFAITING. ***(4 Marks)***

(c) List out the steps to be followed by the manager to measure and maximize the Shareholder's Wealth ***(2 Marks)***

OR

Explain the limitations of Average Rate of Return. ***(2 Marks)***

Answer

(a) Post-shipment Finance: It takes the following forms:

(a) **Purchase/discounting of documentary export bills**: Finance is provided to exporters by purchasing export bills drawn payable at sight or by discounting usance export bills covering confirmed sales and backed by documents including documents of the title of goods such as bill of lading, post parcel receipts, or air consignment notes.

(b) **E.C.G.C. Guarantee:** Post-shipment finance, given to an exporter by a bank through purchase, negotiation or discount of an export bill against an order, qualifies for post-shipment export credit guarantee. It is necessary, however, that exporters should obtain a shipment or contracts risk policy of E.C.G.C. Banks insist on the exporters to take a contracts shipments (comprehensive risks) policy covering both political and commercial risks. The Corporation, on acceptance of the policy, will fix credit limits for individual exporters and the Corporation's liability will be limited to the extent of the limit so fixed for the exporter concerned irrespective of the amount of the policy.

(c) **Advance against export bills sent for collection:** Finance is provided by banks to exporters by way of advance against export bills forwarded through them for collection, taking into account the creditworthiness of the party, nature of goods exported, usance, standing of drawee, etc.

(d) **Advance against duty draw backs, cash subsidy, etc.:** To finance export losses sustained by exporters, bank advance against duty draw-back, cash subsidy, etc., receivable by them against export performance. Such advances are of clean nature; hence necessary precaution should be exercised.

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(b) The Salient features of forfaiting are:

- It motivates exporters to **explore new geographies** as payment is assured.
- An overseas buyer (importer) can import goods and services on **deferred payment terms**.
- The exporter enjoys **reduced transaction costs and complexities** of international trade transactions.
- The exporter gets to **compete in the international market** and can continue to put his working capital to good use to scale up operations.
- While importers avail of forfaiting facility from international financial institutions in order to **finance their imports at competitive rates**.

(c) For measuring and maximising shareholders' wealth, manager should follow:

Cash Flow approach not Accounting Profit

Cost benefit analysis

Application of time value of money.

Or

Limitations of Average Rate of Return

- The accounting rate of return technique, like the payback period technique, **ignores the time value of money** and considers the value of all cash flows to be equal.
- The technique uses accounting numbers that are dependent on the organization's **choice of accounting procedures,** and different accounting procedures, e.g., depreciation methods, can lead to substantially different amounts for an investment's net income and book values.
- The method **uses net income rather than cash flows**; while net income is a useful measure of profitability, the net cash flow is a better measure of an investment's performance.
- Furthermore, inclusion of only the book value of the invested asset **ignores** the fact that a project can require **commitments of working capital** and other outlays that are not included in the book value of the project.

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SECTION – B: ECONOMICS FOR FINANCE

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

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

Question 7

(a) Explain the measurement of Net Domestic Product at market price. ***(2 Marks)***

(b) In the context of India, measure money supply (M3) as per guidelines published by Reserve Bank of India. ***(3 Marks)***

		(In crores of) ₹
(i)	*Currency notes and coins with the public*	*24,637.20*
(ii)	*Demand deposits of Banks*	*2,01,589.60*
(iii)	*Net time deposits with post office saving accounts*	*28,116.40*
(iv)	*Other deposits with Reserve Bank*	*420.10*
(v)	*Saving deposits with post office saving banks*	*415.25*

(c) Justify the role of public debt as an instrument of Fiscal Policy. ***(2 Marks)***

(d) Compare and contrast between devaluation and depreciation in the context of exchange rate. ***(3 Marks)***

Answer

(a) Net domestic product at market prices (NDP_{MP}) is a measure of the market value of all final economic goods and services, produced within the domestic territory of a country by its normal residents and non-residents during an accounting year less depreciation. The portion of the capital stock used up in the process of production or depreciation must be subtracted from final sales because depreciation represents capital consumption and therefore accost of production.

$$NDP_{MP} = GDP_{MP} - \text{Depreciation}$$

(b) $M_3 = M_1$ + time deposits with banking System

= Currency notes and coins with the people + demand deposits with the banking system (Current and Saving deposit accounts) + other deposits with the RBI + time deposits with banking System

= 24637.20 + 201589.60 + 28116.40 + 420.10

= ₹ 254763.3 Cr

(c) A rational policy of public borrowing and debt repayment is a potent weapon to fight inflation and deflation. Borrowing from the public through the sale of bonds and securities curtails the aggregate demand in the economy. Repayments of debt by governments increase the availability of money in the economy and increase aggregate demand.

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Public debt may be internal or external; when the government borrows from its own people in the country, it is called internal debt. On the other hand, when the government borrows from outside sources, the debt is called external debt. Public debt takes two forms namely, market loans and small savings.

(d) Devaluation is a monetary policy tool used by countries that have a fixed exchange rate or nearly fixed exchange rate regime and involves a discrete official reduction in the otherwise fixed par value of a currency. The monetary authority formally sets a new fixed rate with respect to a foreign reference currency or currency basket.

Depreciation lowers the relative price of a country's exports, raises the relative price of its imports, increases demand both for domestic import- competing goods and for exports, leads to output expansion, encourages economic activity, increases the international competitiveness of domestic industries, increases the volume of exports, and improves trade balance.

Devaluation is a deliberate downward adjustment in the value of a country's currency relative to another country's currency or group of currencies or standard, in contrast depreciation is a decrease in a currency's value (relative to other major currency benchmarks) due to market forces of demand and supply under a floating exchange rate and not due to any government or central bank policy actions.

Question 8

(a) Calculate the national income using income and expenditure method from the data given below:

Items:	*₹ in crores*
(i) Government purchase of goods and services	*7,000*
(ii) Indirect tax	*9,000*
(iii) Subsidies	*1,800*
(iv) Gross business fixed capital	*13,000*
(v) Inventory Investment	*3,000*
(vi) Consumption of fixed capital	*4,000*
(vii) Personal consumption expenditure	*51,000*
(viii) Export of goods and services	*4,800*
(ix) Net factor income from aboard	*(-) 300*
(x) Imports of goods and services	*5,600*
(xi) Mixed income of self employed	*28,000*
(xii) Rent, interest and profits	*10,000*
(xiii) Compensation of employees	*24,000*

(3 + 2 = 5 Marks)

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(b) (i) Describe various types of externalities which cause market failure. ***(3 Marks)***

(ii) Mention any four sectors in which foreign direct investment is prohibited. ***(2 Marks)***

Answer

(a) Income Method

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

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

= ₹ 61700 Cr

Expenditure Method:

GDP=C+I+G+(X−M)

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

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

= ₹ 73200cr

GNPmp = 73200+Net factor Income from Abroad

=₹ 73200+(-300) **= ₹ 72900cr**

NNPmp = ₹72900 – 4000 = **₹ 68900 cr**

NNPfc or National Income = ₹ 68900-7200 = **₹ 61700cr**

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

The four possible types of externalities are:

- **Negative production externalities**: A negative externality initiated in production which imposes an external cost on others may be received by another in consumption or in production. As an example, a negative production externality occurs when a factory which produces aluminum discharges untreated waste water into a nearby river and pollutes the water causing health hazards for people who use the water for drinking and bathing. Additionally, there is no market in which these external costs can be reflected in the price of aluminum.

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- **Positive production externalities**: A positive production externality is received in consumption when an individual raises an attractive garden and the persons walking by enjoy the garden. These external effects were not in fact considered when the production decisions were made.
- **Negative consumption externalities**: Negative consumption externalities are extensively experienced by us in our day-to-day life. Such negative consumption externalities initiated in consumption which produce external costs on others may be received in consumption or in production
- **Positive consumption externalities:** A positive consumption externality initiated in consumption that confers external benefits on others may be received in consumption or in production. For example, if people get immunized against contagious diseases, they will confer a social benefit to others as well by preventing others from getting infected.

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

Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to consume.

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

(i) Lottery business including Government / private lottery, online lotteries, etc.

(ii) Gambling and betting including casinos etc.

(iii) Chit funds

(iv) Nidhi company

(v) Trading in Transferable Development Rights (TDRs)

(vi) Real Estate Business or Construction of Farmhouses

(vii) Manufacturing of cigars, cheroots, cigarillos, and cigarettes, of tobacco or of tobacco substitutes

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(viii) Activities / sectors not open to private sector investment e.g., atomic energy and railway operations (other than permitted activities).

Question 9

(a) (i) Justify the following statements in the light of holding cash balance. ***(3 Marks)***

(1) For investment in interest bearing assets

(2) In the prevailing scenario, usually all transactions are made through online or E-banking.

(3) Money is a unique store of value

(ii) Briefly describe any two advantages of fixed exchange rate regime in the context of open economy. ***(2 Marks)***

(b) (i) Define Common Access Resources. Why they are over-used? Explain. ***(2 Marks)***

(ii) Explain in brief any four effects of Tariffs on importing and exporting countries.

(3 Marks)

Answer

(a) (i) (1) For Investment in interest bearing assets: The speculative motive reflects people's desire to hold cash in order to be equipped to exploit any attractive investment opportunity requiring cash expenditure. According to Keynes, people demand to hold money balances to take advantage of the future changes in the rate of interest, which is the same as future changes in bond prices.

(2) In the prevailing scenario, usually all transactions are made through online or E banking: The transactions motive for holding cash relates to 'the need for cash for current transactions for personal and business exchange.' The need for holding money arises because there is lack of synchronization between receipts and expenditures.

(3) Money is a unique store of value: Many unforeseen and unpredictable contingencies involving money payments occur in our day-to-day life. Individuals as well as businesses keep a portion of their income to finance such unanticipated expenditures. The amount of money demanded under the precautionary motive depends on the size of income, prevailing economic as well as political conditions and personal characteristics of the individual such as optimism/ pessimism, farsightedness etc.

(ii) A fixed exchange rate, also referred to as pegged exchange rate, is an exchange rate regime under which a country's 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.

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A fixed exchange rate avoids currency fluctuations and eliminates exchange rate risks and transaction costs, enhances international trade and investment, and lowers the levels of inflation. But the central bank has to maintain an adequate amount of reserves and be always ready to intervene in the foreign exchange market.

(b) (i) 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. They are generally available free of charge. Some important natural resources fall into this category. Examples of common access resources are fisheries, forests, backwaters, common pastures, rivers, sea, backwaters biodiversity etc.

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.

(ii) Tariffs, also known as customs duties, are basically taxes or duties imposed on goods and services which are imported or exported. They are the most visible and universally used trade measures that determine market access for goods. Instead of a single tariff rate, countries have a tariff schedule which specifies the tariff collected on every particular good and service.

Effect of tariff on importing and exporting countries is as follows:

- Tariff barriers create obstacles to trade, decrease the volume of imports and exports and therefore of international trade. The prospect of market access of the exporting country is worsened when an importing country imposes a tariff.
- By making imported goods more expensive, tariffs discourage domestic consumers from consuming imported foreign goods. Domestic consumers suffer a loss in consumer surplus because they must now pay a higher price for the good and also because compared to free trade quantity, they now consume lesser quantity of the good.
- Tariffs encourage consumption and production of the domestically produced import substitutes and thus protect domestic industries.
- Producers in the importing country experience an increase in well-being as a result of imposition of tariff. The price increase of their product in the domestic market increases producer surplus in the industry. They can also charge higher prices than would be possible in the case of free trade because foreign competition has reduced.

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- The price increase also induces an increase in the output of the existing firms and possibly addition of new firms due to entry into the industry to take advantage of the new high profits and consequently an increase in employment in the industry.
- Tariffs create trade distortions by disregarding comparative advantage and prevent countries from enjoying gains from trade arising from comparative advantage. Thus, tariffs discourage efficient production in the rest of the world and encourage inefficient production in the home country.
- Tariffs increase government revenues of the importing country by the value of the total tariff it charges.

Question 10

(a) (i) Fisher's equation of exchange is: MV =PT. If velocity (V) = 25, Price (P) 110.5 and volume of transaction (T) = 200 billion. ***(3 Marks)***

Calculate:

(1) Total money supply (m)

(2) Effect on M when velocity (V) increases to 75

(3) Velocity (V) when the volume of transactions increases to 325 billion.

(ii) Briefly explain the advantages of two key concepts of New Trade theories to countries when importing goods to compete with products from the home country.

(2 Marks)

(b) (i) Mention any three key objectives of World Trade Organisation. ***(3 Marks)***

(ii) Describe the differences between Liquidity Adjustment Facility (LAF) and Marginal Standing Facility (MSF). ***(2 Marks)***

Answer

(a) (i) (1) MV = PT

M× 25 = 110.5 ×200

Therefore,25 M = 22100

Then M = 22100÷25 = 884 bn

Total supply supply (m) **= 884**bn

(2) M ×75 = 110.5 × 200

M = 110.5 × 200÷ 75 **= 294.66**bn

Hence supply of money will reduce from 884bn to 294.66bn

(3) MV = PT

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884× V= 110.5×325V **= 40.62**bn

When Volume of transaction increases to 325bn velocity (v) will be 40.62bn

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

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

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

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

The WTO has six key objectives:

- to set and enforce rules for international trade
- to provide a forum for negotiating and monitoringfurther trade liberalization
- to resolve trade disputes
- to increase the transparency of decision-making processes
- to cooperate with other major international economic institutions involved in global economic management, and
- to help developing countries benefit fully from the global trading system.

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

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banks through repos/reverse repos under the Liquidity Adjustment Facility (LAF).

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

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

Question 11

(a) (i) The equation of 'consumption function' of an economy is as follows: ***(3 Marks)***

C = ₹ 450 + 0. 70 y

You are required to compute the following:

(1) Consumption when disposable income (y) is ₹ 3,500 and ₹ 5,800.

(2) Saving when disposable income (y) is ₹ 3,500 and ₹ 5,500.

(3) Amount induced when disposable income is ₹ 3,200.

(ii) Distinguish between horizontal, vertical and conglomerate type of foreign investments. ***(2 Marks)***

(b) (i) Explain the concept of 'Voluntary Export Restraints'. Under which circumstances exporters commit to voluntary export restraint? Discuss. ***(3 Marks)***

(ii) Mention any four arguments made in favour of Foreign Direct Investment to developing economy like India. ***(2 Marks)***

OR

Explain the concept of Real Exchange Rate. ***(2 Marks)***

Answer

(a) (i) C = 450 + 0.70y

(1) Consumption when disposable income (y) is ₹ 3,500 and ₹ 5800 C = 450 + 0.70 × 3500 = **2900**

C = 450 + 0.70 × 5800 = **4510**

(2) Saving when disposable income (y) is ₹ 3500 & ₹ 5,500 When y = ₹ 3500, C = ₹2900

S = y-c = 3500-2900= **600**

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When y = 5500

C = 450 + 0.70 ×5500 = 4300

S = y-c = 5500-4300= **1200**

(3) Amount induced when disposable income is ₹ 3200

Y = C+I

C= 450 + 0.70× 3200 = 2690

3200 = 2690 + I

I = 510

(ii) Based on the nature of foreign investments, FDI may be categorized as horizontal, vertical, or conglomerate.

A horizontal direct investment is said to take place when the investor establishes the same type of business operation in a foreign country as it operates in its home country, for example, a cell phone service provider based in the United States moving to India to provide the same service.

A vertical investment is one under which the investor establishes or acquires a business activity in a foreign country which is different from the investor's main business activity yet in some way supplements its major activity. For example, an automobile manufacturing company may acquire an interest in a foreign company that supplies parts or raw materials required for the company.

A conglomerate type of foreign direct investment is one where an investor makes a foreign investment in a business that is unrelated to its existing business in its home country. This is often in the form of a joint venture with a foreign firm already operating in the industry, as the investor has no previous experience.

(b) (i) Voluntary Export Restraints (VERs) refer to a type of informal quota administered by an exporting country voluntarily restraining the quantity of goods that can be exported out of that country during a specified period of time.

The inducement for the exporter to agree to a VERs is mostly to appease the importing country and to avoid the effects of possible retaliatory trade restraints that may be imposed by the importer. VERs may arise when the import- competing industries seek protection from a surge of imports from exporting countries. VERs cause, as do tariffs and quotas, domestic prices to rise and cause loss of domestic consumer surplus.

(ii) Foreign direct investment (FDI), according to IMF manual on 'Balance of payments' is "all investments involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy in an enterprise resident in an economy other than that of the direct investor".

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Arguments in favour of foreign Direct Investment to developing economy like India are as follows:

- the increasing interdependence of national economies and the consequent trade relations and international industrial cooperation established among them
- desire to reap economies of large-scale operation arising from technological growth
- shared common language or common boundaries and possible saving in time and transport costs because of geographical proximity
- promoting optimal utilization of physical, human, financial and other resources
- desire to capture large and rapidly growing high potential emerging markets with substantially high and growing population
- stable political environment and overall favourable investment climate in the host country
- lower level of economic efficiency in host countries and identifiable gaps in development
- tax differentials and tax policies of the host country which support foreign direct investment. However, a low tax burden cannot compensate for a generally fragile and unattractive FDI environment.

OR

The 'real exchange rate' incorporates changes in prices and describes 'how many' of a good or service in one country can be traded for 'one' of that good or service in a foreign country.

For calculating real exchange rate, in the case of trade in a single good, we must first use the nominal exchange rate to convert the prices into a common currency. The real exchange rate (RER) between two currencies is the product of the nominal exchange rate and the ratio of prices between the two countries

$$\text{Real exchange rate} = \text{Nominal exchange rate} \times \frac{\text{Domestic price}}{\text{Foreign price Index}}$$

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