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) A factoring firm has offered a company to buy its accounts receivables.

The relevant information is given below:

(i) The current average collection period for the company's debt is 80 days and ½% of debtors default. The factor has agreed to pay over money due to the company after 60 days and it will suffer all the losses of bad debts also.

(ii) Factor will charge commission @2%.

(iii) The company spends ₹ 1,00,000 p.a. on administration of debtor.

These are avoidable cost.

(iv) Annual credit sales are ₹ 90 lakhs. Total variable costs is 80% of sales. The company's cost of borrowing is 15% per annum. Assume 365 days in a year.

Should the company enter into agreement with factoring firm? ***(5 Marks)***

(b) Book value of capital structure of B Ltd. is as follows:

Sources	*Amount*
12%, 6,000 Debentures @ ₹ 100 each	*₹ 6,00,000*
Retained earnings	*₹ 4,50,000*
4,500 Equity shares @ ₹ 100 each	*₹ 4,50,000*
	₹ 15,00,000

Currently, the market value of debenture is ₹ 110 per debenture and equity share is ₹ 180 per share. The expected rate of return to equity shareholder is 24% p.a. Company is paying tax @ 30%.

Calculate WACC on the basis of market value weights. ***(5 Marks)***

(c) X Ltd. is a multinational company. Current market price per share is ₹ 2,185. During the F.Y. 2020-21, the company paid ₹ 140 as dividend per share. The company is expected to grow @ 12% p.a. for next four years, then 5% p.a. for an indefinite period. Expected rate of return of shareholders is 18% p.a.

(i) Find out intrinsic value per share.

(ii) State whether shares are overpriced or underpriced.

Year	*1*	*2*	*3*	*4*	*5*
Discounting Factor @ 18%	*0.847*	*0.718*	*0.608*	*0.515*	*0.436*

(5 Marks)

(d) A garment trader is preparing cash forecast for first three months of calendar year 2021. His estimated sales for the forecasted periods are as below:

	January (₹ '000)	*February (₹ '000)*	*March (₹ '000)*
Total sales	*600*	*600*	*800*

(i) The trader sells directly to public against cash payments and to other entities on credit. Credit sales are expected to be four times the value of direct sales to public. He expects 15% customers to pay in the month in which credit sales are made, 25% to pay in the next month and 58% to pay in the next to next month. The outstanding balance is expected to be written off.

(ii) Purchases of goods are made in the month prior to sales and it amounts to 90% of sales and are made on credit. Payments of these occur in the month after the purchase. No inventories of goods are held.

(iii) Cash balance as on 1st January, 2021 is ₹ 50,000.

(iv) Actual sales for the last two months of calendar year 2020 are as below:

	November (₹ '000)	*December (₹ '000)*
Total sales	*640*	*880*

You are required to prepare a monthly cash, budget for the three months from January to March, 2021. ***(5 Marks)***

Answer

(a)

	Particulars	**(₹)**
A.	**Annual Savings (Benefit) on taking Factoring Service**	
	Cost of credit administration saved	1,00,000
	Bad debts avoided (₹ 90 lakh x ½%)	**45,000**

	Interest saved due to reduction in average collection period [₹ 90 lakh x 0.80 × 0.15 × (80 days – 60 days)/365 days]	**59,178**
	Total	**2,04,178**
B.	**Annual Cost of Factoring to the Firm:**	
	Factoring Commission [₹ 90 lakh × 2%]	1,80,000
	Total	**1,80,000**
C.	**Net Annual Benefit of Factoring to the Firm (A – B)**	**24,178**

Advice: Since savings to the firm exceeds the cost to the firm on account of factoring, therefore, the company should enter into agreement with the factoring firm.

(b) Calculation of Cost of Capital of debentures ignoring market value:

Cost of Debentures (K_d)= 12 (1 - .30) = 8.40%

Computation of Weighted Average Cost of Capital based on Market Value Weights

Source of Capital	Market Value (₹)	Weights to Total Capital	After tax Cost of capital (%)	WACC (%)
Debentures (6,000 nos. × ₹ 110)	6,60,000	0.45(approx.)	8.40	3.78
Equity Shares (4,500 nos. × ₹180)	8,10,000	0.55(approx.)	24.00	13.20
	14,70,000	1.00		16.98

Note: Cost of Debenture and Cost of equity considered as given without considering market value. Cost of sources of capital can be computed based on the Market price and accordingly Weighted Average Cost of Capital can be calculated as below:

Calculation of Cost of Capital for each source of capital considering market value of capital:

(1) Cost of Equity share capital:

$$K_e = \frac{\text{Earnings}}{\text{Market Price per share}} = \frac{24\% \times ₹100}{₹180} = 13.333\%$$

(2) Cost of Debentures (K_d)= $\frac{I(1-t)}{NP} = \frac{₹12(1-0.3)}{₹110} = 7.636\%$

Computation of Weighted Average Cost of Capital based on Market Value Weights

Source of Capital	Market Value (₹)	Weights to Total Capital	After tax Cost of capital (%)	WACC (%)
Debentures (6,000 nos. × ₹ 110)	6,60,000	0.45(approx.)	7.636	**3.44** (approx.)
Equity Shares (4,500 nos. × ₹ 180)	8,10,000	0.55(approx.)	13.333	**7.33** (approx.)
	14,70,000	1.00		**10.77** (approx.)

(c) As per Dividend discount model, the price of share is calculated as follows:

$$P=\frac{D_1}{(1+K_e)^1}+\frac{D_2}{(1+K_e)^2}+\frac{D_3}{(1+K_e)^3}+\frac{D_4}{(1+K_e)^4}+\frac{D_4(1+g)}{(K_e-g)}\times\frac{1}{(1+K_e)^4}$$

Where,

P = Price per share

K_e = Required rate of return on equity

g = Growth rate

$$P=\frac{₹\ 140\times 1.12}{(1+0.18)^1}+\frac{₹\ 156.80\times 1.12}{(1+0.18)^2}+\frac{₹\ 175.62\times 1.12}{(1+0.18)^3}+\frac{₹\ 196.69\times 1.12}{(1+0.18)^4}+\frac{₹\ 220.29\ (1+0.05)}{(0.18-0.05)}\times\frac{1}{(1+0.18)^4}$$

P= **132.81 + 126.10 + 119.59 + 113.45 + 916.34 = ₹ 1,408.29**

Intrinsic value of share is ₹ 1,408.29 as compared to latest market price of ₹2,185. **Market price of share is over-priced by ₹ 776.71.**

(d) Working Notes:

(1) Calculation of cash and credit sales (₹ in thousands)

	Nov.	Dec.	Jan.	Feb.	Mar.
Total Sales	640	880	600	600	800
Cash Sales (1/5th of total sales)	128	176	120	120	160
Credit Sales (4/5th of total sales)	512	704	480	480	640

(2) Calculation of Credit Sales Receipts (₹ in thousands)

Month	Nov.	Dec.	Jan.	Feb.	Mar.
Forecast Credit sales (Working note 1)	512.00	704.00	480.00	480.00	640.00

Receipts:					
15% in the month of sales			**72.00**	**72.00**	**96.00**
25% in next month			**176.00**	**120.00**	**120.00**
58% in next to next month			**296.96**	**408.32**	**278.40**
Total			544.96	600.32	494.40

Cash Budget (₹in thousands)

	Nov.	Dec.	Jan.	Feb.	Mar.
Opening Balance **(A)**			50.00	174.96	355.28
Sales	640.00	880.00	600.00	600.00	800.00
Receipts:					
Cash Collection (Working note 1)			120.00	120.00	160.00
Credit Collections (Working note 2)			544.96	600.32	494.40
Total **(B)**			664.96	720.32	654.40
Purchases (90% of sales in the month prior to sales)		540	540	720	
Payments:					
Payment for purchases (next month)			**540**	**540**	**720**
Total **(C)**			540	540	720
Closing balance**(D) = (A + B – C)**			174.96	355.28	**289.68**

Question 2

Following are the data in respect of ABC Industries for the year ended 31st March, 2021:

Debt to Total assets ratio : 0.40

Long-term debts to equity ratio : 30%

Gross profit margin on sales : 20%

Accounts receivables period : 36 days

Quick ratio : 0.9

Inventory holding period : 55 days

Cost of goods sold : ₹64,00,000

Liabilities	*₹*	*Assets*	*₹*
Equity Share Capital	*20,00,000*	*Fixed assets*	
Reserves & surplus		*Inventories*	

Long-term debts		*Accounts receivable*	
Accounts payable		*Cash*	
Total	*50,00,000*	*Total*	

Required:

Complete the Balance Sheet of ABC Industries as on 31st March, 2021. All calculations should be in nearest Rupee. Assume 360 days in a year. ***(10 Marks)***

Answer

Working Notes:

(1) Total liability = Total Assets = ₹ 50,00,000

Debt to Total Asset Ratio = 0.40

$$\frac{\text{Debt}}{\text{Total Assets}} = 0.40$$

Or, $\frac{\text{Debt}}{50,00,000} = 0.40$

So, **Debt** **= 20,00,000**

(2) Total Liabilities = ₹ 50,00,000

Equity share Capital + Reserves + Debt = ₹ 50,00,000

So, Reserves =₹ 50,00,000 - ₹ 20,00,000 - ₹ 20,00,000

So, Reserves & Surplus = ₹ 10,00,000

(3) $\frac{\text{Long term Debt}}{\text{Equity Shareholders' Fund}} = 30\%$*

$\frac{\text{Long term Debt}}{(20,00,000+10,00,000)} = 30\%$

Long Term Debt **= ₹ 9,00,000**

(4) So, Accounts Payable = ₹ 20,00,000 – ₹ 9,00,000

Accounts Payable **= ₹ 11,00,000**

(5) Gross Profit to sales = 20%

Cost of Goods Sold = 80% of Sales = ₹ 64,00,000

Sales = $\frac{100}{80} \times 64,00,000$ **= 80,00,000**

(6) Inventory Turnover $= \frac{360}{55}$

$\frac{\text{COGS}}{\text{Closing inventory}} = \frac{360}{55}$

$\frac{64,00,000}{\text{Closing inventory}} = \frac{360}{55}$

Closing inventory = 9,77,778

(7) Accounts Receivable period = 36 days

$\frac{\text{Accounts Receivable}}{\text{Credit sales}} \times 360 = 36$

Accounts Receivable $= \frac{36}{360} \times$ credit sales

$= \frac{36}{360} \times 80,00,000$ (assumed all sales are on credit)

Accounts Receivable = ₹ 8,00,000

(8) Quick Ratio = 0.9

$\frac{\text{Quick Assets}}{\text{Current liabilities}} = 0.9$

$\frac{\text{Cash + Debtors}}{11,00,000} = 0.9$

Cash + 8,00,000 = ₹ 9,90,000

Cash = ₹ 1,90,000

(9) Fixed Assets = Total Assets- Current Assets = 50,00,000 – (9,77,778+8,00,000+1,90,000) = **30,32,222**

Balance Sheet of ABC Industries as on 31st March 2021

Liabilities	**(₹)**	**Assets**	**(₹)**
Share Capital	20,00,000	Fixed Assets	**30,32,222**
Reserved surplus	**10,00,000**	Current Assets:	
Long Term Debt	**9,00,000**	Inventory	**9,77,778**
Accounts Payable	**11,00,000**	Accounts Receivables	**8,00,000**
		Cash	**1,90,000**
Total	50,00,000	**Total**	**50,00,000**

(***Note:** Equity shareholders' fund represent equity in 'Long term debts to equity ratio'. The question can be solved assuming only share capital as 'equity')

Question 3

Earnings before interest and tax of a company are ₹ 4,50,000. Currently the company has 80,000 Equity shares of ₹ 10 each, retained earnings of ₹ 12,00,000. It pays annual interest of ₹ 1,20,000 on 12% Debentures. The company proposes to take up an expansion scheme for which it needs additional fund of ₹ 6,00,000. It is anticipated that after expansion, the company will be able to achieve the same return on investment as at present.

It can raise fund either through debts at rate of 12% p.a. or by issuing Equity shares at par. Tax rate is 40%.

Required:

Compute the earning per share if:

(i) The additional funds were raised through debts.

(ii) The additional funds were raised by issue of Equity shares.

Advise whether the company should go for expansion plan and which sources of finance should be preferred. ***(10 Marks)***

Answer

Working Notes:

(1) **Capital employed before expansion plan:**

	(₹)
Equity shares (₹ 10 × 80,000 shares)	8,00,000
Debentures {(₹ 1,20,000/12) × 100}	10,00,000
Retained earnings	12,00,000
Total capital employed	**30,00,000**

(2) **Earnings before interest and tax (EBIT) =** 4,50,000

(3) **Return on Capital Employed (ROCE):**

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital employed}} \times 100 = \frac{₹\ 4,50,000}{₹\ 30,00,000} \times 100 = \mathbf{15\%}$$

(4) **Earnings before interest and tax (EBIT) after expansion scheme:**

After expansion, capital employed = ₹ 30,00,000 + ₹ 6,00,000 = ₹ 36,00,000

Desired EBIT = 15% × ₹ 36,00,000 = **₹ 5,40,000**

(i) & (ii) Computation of Earnings Per Share (EPS) under the following options:

	Present situation	Expansion scheme Additional funds raised as	
		Debt (i)	Equity (ii)
	(₹)	(₹)	(₹)
Earnings before Interest and Tax (EBIT)	4,50,000	5,40,000	5,40,000
Less: Interest - Old Debt	1,20,000	1,20,000	1,20,000
- New Debt	--	**72,000** (₹ 6,00,000 × 12%)	--
Earnings before Tax (EBT)	3,30,000	3,48,000	4,20,000
Less: Tax (40% of EBT)	1,32,000	1,39,200	1,68,000
PAT/EAT	1,98,000	**2,08,800**	**2,52,000**
No. of shares outstanding	80,000	80,000	1,40,000
Earnings per Share (EPS)	2.475 $\left(\frac{₹\ 1,98,000}{80,000}\right)$	**2.610** $\left(\frac{₹\ 2,08,800}{80,000}\right)$	**1.800** $\left(\frac{₹\ 2,52,000}{1,40,000}\right)$

Advise to the Company: When the expansion scheme is financed by additional debt, the EPS is higher. Hence, the company **should finance the expansion** scheme by **raising debt**.

Question 4

Stand Ltd. is contemplating replacement of one of its machines which has become outdated and inefficient. Its financial manager has prepared a report outlining two possible replacement machines. The details of each machine are as follows:

	Machine 1	***Machine 2***
Initial investment	*₹ 12,00,000*	*₹ 16,00,000*
Estimated useful life	*3 years*	*5 years*
Residual value	*₹ 1,20,000*	*₹ 1,00,000*
Contribution per annum	*₹ 11,60,000*	*₹ 12,00,000*
Fixed maintenance costs per annum	*₹ 40,000*	*₹ 80,000*
Other fixed operating costs per annum	*₹ 7,20,000*	*₹ 6,10,000*

The maintenance costs are payable annually in advance. All other cash flows apart from the initial investment assumed to occur at the end of each year. Depreciation has been calculated

by straight line method and has been included in other fixed operating costs. The expected cost of capital for this project is assumed as 12% p.a.

Required:

(i) Which machine is more beneficial, using Annualized Equivalent Approach? Ignore tax.

(ii) Calculate the sensitivity of your recommendation in part (i) to changes in the contribution generated by machine 1.

Year	*1*	*2*	*3*	*4*	*5*	*6*
$PVIF_{0.12,t}$	*0.893*	*0.797*	*0.712*	*0.636*	*0.567*	*0.507*
$PVIFA_{0.12,t}$	*0.893*	*1.690*	*2.402*	*3.038*	*3.605*	*4.112*

(10 Marks)

Answer

(i) Calculation of Net Cash flows

Machine 1

Other fixed operating costs (excluding depreciation) = 7,20,000–[(12,00,000–1,20,000)/3] = ₹ 3,60,000

Year	Initial Investment (₹)	Contribution (₹)	Fixed maintenance costs (₹)	Other fixed operating costs (excluding depreciation) (₹)	Residual Value (₹)	Net cash flow (₹)
0	(12,00,000)		(40,000)			(12,40,000)
1		11,60,000	(40,000)	(3,60,000)		7,60,000
2		11,60,000	(40,000)	(3,60,000)		7,60,000
3		11,60,000		(3,60,000)	1,20,000	9,20,000

Machine 2

Other fixed operating costs (excluding depreciation) = 6,10,000–[(16,00,000–1,00,000)/5] = ₹ 3,10,000

Year	Initial Investment (₹)	Contribution (₹)	Fixed maintenance costs (₹)	Other fixed operating costs (excluding depreciation) (₹)	Residual Value (₹)	Net cash flow (₹)
0	(16,00,000)		(80,000)			(16,80,000)

1		12,00,000	(80,000)	(3,10,000)		8,10,000
2		12,00,000	(80,000)	(3,10,000)		8,10,000
3		12,00,000	(80,000)	(3,10,000)		8,10,000
4		12,00,000	(80,000)	(3,10,000)		8,10,000
5		12,00,000		(3,10,000)	1,00,000	9,90,000

Calculation of Net Present Value

		Machine 1		Machine 2	
Year	**12% discount factor**	**Net cash flow (₹)**	**Present value (₹)**	**Net cash flow (₹)**	**Present value (₹)**
0	1.000	(12,40,000)	(12,40,000)	(16,80,000)	(16,80,000)
1	0.893	7,60,000	6,78,680	8,10,000	7,23,330
2	0.797	7,60,000	6,05,720	8,10,000	6,45,570
3	0.712	9,20,000	6,55,040	8,10,000	5,76,720
4	0.636			8,10,000	5,15,160
5	0.567			9,90,000	5,61,330
NPV @ 12%			**6,99,440**		**13,42,110**
PVAF @ 12%			2.402		3.605
Equivalent Annualized Criterion			**2,91,190.674**		**3,72,291.262**

Recommendation: Machine 2 is more beneficial using Equivalent Annualized Criterion.

(ii) Calculation of sensitivity of recommendation in part (i) to changes in the contribution generated by machine 1

Difference in Equivalent Annualized Criterion of Machines required for changing the recommendation in part (i) = 3,72,291.262- 2,91,190.674 = ₹ **81,100.588**

$\therefore$ Sensitivity relating to contribution $= \frac{₹\ 81,100.588}{₹\ 11,60,000.00} \times 100 = 6.991$ or **7% yearly**

Alternatively,

The annualized equivalent cash flow for machine 1 is lower by ₹ (3,72,291.262– 2,91,190.674) = **₹81,100.588** than for machine 2. Therefore, it would need to increase contribution for **complete 3 years** before the decision would be to invest in this machine.

Sensitivity w.r.t contribution = 81,100.588 / (11,60,000 × 2.402) x100 = **2.911%**

Question 5

Information of A Ltd. is given below:

- *Earnings after tax: 5% on sales*
- *Income tax rate: 50%*
- *Degree of Operating Leverage: 4 times*
- *10% Debenture in capital structure: ₹ 3 lakhs*
- *Variable costs: ₹ 6 lakhs*

Required:

(i) From the given data complete following statement:

Sales	*XXXX*
Less: Variable costs	*₹ 6,00,000*
Contribution	*XXXX*
Less: Fixed costs	*XXXX*
EBIT	*XXXX*
Less: Interest expenses	*XXXX*
EBT	*XXXX*
Less: Income tax	*XXXX*
EAT	*XXXX*

(ii) Calculate Financial Leverage and Combined Leverage.

(iii) Calculate the percentage change in earning per share, if sales increased by 5%.

(10 Marks)

Answer

(i) Working Notes

Earning after tax (EAT)is 5% of sales

Income tax is 50%

So, EBT is 10% of Sales

Since Interest Expenses is ₹ 30,000

EBIT = 10% of Sales + ₹30,000 ..... (Equation i)

Now Degree of operating leverage = 4

So, $\frac{\text{Contribution}}{\text{EBIT}} = 4$

Or, Contribution = 4 EBIT

Or, Sales – Variable Cost = 4 EBIT

Or, Sales – ₹ 6,00,000 = 4 EBIT ..... (Equation ii)

Replacing the value of EBIT of equation (i) in Equation (ii)

We get, Sales – ₹ 6,00,000 = 4 (10% of Sales + ₹ 30,000)

Or, Sales – ₹ 6,00,000 = 40% of Sales + ₹ 1,20,000

Or, 60% of Sales = ₹ 7,20,000

So, Sales = $\frac{₹\ 7,20,000}{60\%}$ =**₹ 12,00,000**

Contribution = Sales – Variable Cost = ₹ 12,00,000 – ₹ 6,00,000 =₹ 6,00,000

EBIT = $\frac{₹\ 6,00,000}{4}$= **₹ 1,50,000**

Fixed Cost = Contribution – EBIT = ₹ 6,00,000 – ₹ 1,50,000 = ₹ 4,50,000

EBT = EBIT – Interest = ₹ 1,50,000 – ₹ 30,000 = **₹ 1,20,000**

EAT = 50% of ₹ 1,20,000 = ₹ 60,000

Income Statement

Particulars	**(₹)**
Sales	**12,00,000**
Less: Variable cost	6,00,000
Contribution	6,00,000
Less: Fixed cost	4,50,000
EBIT	**1,50,000**
Less: Interest	30,000
EBT	**1,20,000**
Less: Tax (50%)	60,000
EAT	60,000

(ii) Financial Leverage $= \frac{EBIT}{EBT} = \frac{1,50,000}{1,20,000} =$ **1.25 times**

Combined Leverage = Operating Leverage × Financial Leverage

$= 4 \times 1.25 =$ **5 times**

Or,

Combined Leverage $= \frac{Contribution}{EBIT} \times \frac{EBIT}{EBT}$

Combined Leverage $= \frac{Contribution}{EBT} = \frac{₹\ 6,00,000}{₹\ 1,20,000} =$ **5 times**

(iii) Percentage Change in Earnings per share

Combined Leverage $= \frac{\%\ Change\ in\ EPS}{\%\ change\ in\ Sales} = 5 = \frac{\%\ change\ in\ EPS}{5\%}$

$\therefore$ % Change in EPS = **25%**

Hence, if sales increased by 5 %, EPS will be increased by 25 %.

Question 6

(a) Write short notes on Bridge Finance and Clean Packing Credit. ***(4 Marks)***

(b) Distinguish between Scenario Analysis & Sensitivity Analysis. ***(4 Marks)***

(c) Explain in brief the phases of the evolution of financial management. ***(2 Marks)***

OR

Adjustment of risk is required in capital budgeting decision, give reasons for it. ***(2 Marks)***

Answer

(a) Bridge Finance: Bridge finance refers to loans taken by a company normally from commercial banks for a short period because of pending disbursement of loans sanctioned by financial institutions. Though it is of short-term nature but since it is an important step in the facilitation of long-term loan, therefore it is being discussed along with the long term sources of funds. Normally, it takes time for financial institutions to disburse loans to companies. However, once the loans are approved by the term lending institutions, companies, in order not to lose further time in starting their projects, arrange short term loans from commercial banks. The bridge loans are repaid/ adjusted out of the term loans as and when disbursed by the concerned institutions. Bridge loans are normally secured by hypothecating movable assets, personal guarantees and demand promissory notes. Generally, the rate of interest on bridge finance is higher as compared with that on term loans.

Clean packing credit: This is an advance made available to an exporter only on production of a firm export order or a letter of credit without exercising any charge or control over raw material or finished goods. **It is a clean type of export advanc**e. Each proposal is weighed according to particular requirements of the trade and credit worthiness of the exporter. A suitable margin has to be maintained. Also, Export Credit Guarantee Corporation (ECGC) cover should be obtained by the bank.

(b) Scenario Analysis Vs Sensitivity Analysis

Sensitivity analysis calculates the impact of the **change of a single input variable on the outcome of the project** viz., NPV or IRR. The sensitivity analysis thus enables to identify that single critical variable which can impact the outcome in a huge way and the range of outcomes of the project given the change in the input variable.

Scenario analysis, on the other hand, is based on a scenario. The scenario may be recession or a boom wherein depending on the scenario, **all input variables change**. Scenario Analysis calculates the outcome of the project considering this scenario where the variables have changed simultaneously. Similarly, the outcome of the project would also be considered for the normal and recessionary situation. The variability in the outcome under the three different scenarios would help the management to assess the risk a project carries. Higher deviation in the outcome can be assessed as higher risk and lower to medium deviation can be assessed accordingly.

Scenario analysis is far more complex than sensitivity analysis because in scenario analysis all inputs are changed simultaneously, considering the situation in hand while in sensitivity analysis, only one input is changed, and others are kept constant.

(c) Evolution of Financial Management: Financial management evolved gradually over the past 50 years. The evolution of financial management is divided into three phases. Financial Management evolved as a separate field of study at the beginning of the century.

The three stages of its evolution are:

The Traditional Phase: During this phase, financial management was considered necessary only during occasional events such as takeovers, mergers, expansion, liquidation, etc. Also, when taking financial decisions in the organisation, the needs of outsiders (investment bankers, people who lend money to the business and other such people) to the business was kept in mind.

The Transitional Phase: During this phase, the day-to-day problems that financial managers faced were given importance. The general problems related to funds analysis, planning and control were given more attention in this phase.

The Modern Phase: Modern phase is still going on. The scope of financial management has greatly increased now. It is important to carry out financial analysis for a company. This analysis helps in decision making. During this phase, many theories have been developed regarding efficient markets, capital budgeting, option pricing, valuation models and also in several other important fields in financial management. Here, financial management is viewed as a supportive and facilitative function, not only for top management but for all levels of management.

OR

Reasons for adjustment of Risk in Capital Budgeting decisions are as follows:

1. There is an opportunity cost involved while investing in a project for the level of risk. Adjustment of risk is necessary to help make the decision as to **whether the returns out of the project are proportionate with the risks borne** and whether it is **worth investing** in the project over the other investment options available.
2. Risk adjustment is required to know the **real value of cash Inflows**. **Higher risk** will lead to **higher risk premium** and also the **expectation of higher return**.

PAPER – 8 : FINANCIAL MANAGEMENT AND ECONOMICS FOR FINANCE

SECTION – B: ECONOMICS FOR FINANCE

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

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

Question 7

(a) The following information is given:

Particulars	*Amount in (₹) Crore*
Notes in Circulation	*25,00,000*
Circulation of Rupee Coins	*26,000*
Circulation of Small Coins	*850*
Cash on hand with Banks	*95,000*
Bankers' Deposits with RBI	*4,500*
Other Deposits with RBI	*180*
Total Post office Deposits	*12,000*
Time Deposits with Banks	*15,000*

You are required to compute:

(i) Currency with the Public; and

(ii) Reserve Money. ***(3 Marks)***

(b) The Nominal GDP and Real GDP of a country in the financial year 2018-19 were ₹ 1,500 crore and ₹ 1,200 crore respectively, you are required to calculate:

(i) GDP deflator in the financial year 2018-19 and comment.

(ii) Inflation rate in the financial year 2019-20 assuming. GDP deflator rate in this year is 140 as compared to the year 2018-19. ***(3 Marks)***

(c) Explain the features of Contractionary Fiscal Policy. ***(2 Marks)***

(d) Describe the types of transactions in the forex-market and also distinguish between forward premium and forward discount. ***(2 Marks)***

Answer

(a) (i) Currency with Public = Notes in Circulation + Circulation of Rupee coins + Circulation of small coins - Cash on hands with banks

= 25,00,000+ 26,000+850-95,000

= 24,31,850 cr.

(ii) Reserve Money = Currency in circulation (Currency with the Public + Cash on Hand with Banks) + Bankers deposits with the RBI + Other deposits with the RBI

= 25,00,000+95,000+26,000+850+4,500+180

= **26,26,530 cr.**

(b) (i) GDP Deflator $= \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$

$= \frac{1,500}{1,200} \times 100 = 125$

GDP deflator for 2018-19 = 125

Comment: A deflator above 100 is an indication of price levels being higher as compared to base year.

(ii) Inflation rate in year 2 $= \frac{\text{GDP deflater in year 2 - GDP deflater in year 1}}{\text{GDP deflater in year 1}} \times 100$

$= \frac{140 - 125}{125} \times 100$ = **12%**

Inflation Rate = 12%

Note: *Year 2 refers to 2019-20 and year 1 refer to 2018-19.*

(c) 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 measure 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:

- **With decrease in government spending**, the total amount of money available in the economy is reduced which in turn trim down the aggregate demand.
- **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.

(d) In the foreign exchange market, there are two types of transactions:

(i) **current transactions** which are carried out in the spot market and the exchange involves immediate delivery, and

(ii) **future transactions** wherein contracts are agreed upon to buy or sell currencies for future delivery which are carried out in forward and/or futures markets.

Forward Premium Vs. Forward Discount

A forward premium is said to occur when the forward exchange rate is more than a spot exchange rates. On the contrary, if the forward trade is quoted at a lower rate than the spot rate, then there is a forward discount.

Question 8

(a) The following information is related to an economy:

Particulars	*Amount in (₹) crore*
Domestic Sales	*3600*
Opening Stock	*800*
Exports	*1000*
Depreciation	*300*
Closing Stock	*200*
Net indirect tax	*400*
Intermediate consumption	*600*
Net factor income from abroad	*10*

Calculate the followings:

(i) Gross Value of Output (GVO_{MP})

(ii) Gross Value Added (GVA_{MP})

(iii) Net Value Added (NVA_{MP})

(iv) Net Domestic Product (NDP_{FC})·

(v) Net National Product (NNP_{FC}) ***(5 Marks)***

(b) (i) Discuss the role of government interventions in minimizing the market power.

(2 Marks)

(ii) Calculate Narrow Money(M_1) from the following information:

	(₹ in Crore)
Currency with public	*2,80,000*
Demand Deposits with banks	*4,00,000*

Time Deposits with banks	*3,40,000*
Other deposits with RBI	*5,80,000*
Post Office Savings Deposits	*90,000*

(3 Marks)

Answer

(a) (i) Gross Value of Output (GVO_{MP}) = (Domestic Sales + Exports) + Change in stock
= 3,600+1,000-600= **₹ 4000 cr**.

(ii) Gross Value Added (GVA_{MP}) = GVO_{MP} – Intermediate Consumption
= 4000-600= **₹ 3400cr.**

(iii) Net Value Added (NVA_{MP}) = GVA_{MP} – Depreciation
= 3400 – 300= **₹ 3100 cr**.

(iv) Net Domestic Product (NDP_{FC}) = NVA_{MP} — Net Indirect Taxes
= 3100– 400 =**₹ 2700 cr**.

(v) Net National Product (NNP_{FC}) = NDP_{FC} + Net Factor Income from Abroad (NFIA)
= 2700+10= **₹ 2710 cr**.

(b) (i) Role of Government intervention in minimizing the market power: Market power is an important factor that contributes to inefficiency because it results in higher prices than competitive prices. Because of the social cost imposed by monopoly governments intervene by establishing rules and regulations designed to promote competition and prohibit actions that are likely to restrain competition. These legislations differ from country to country.

For Eq. in India, we have the Competition Act,2002 (as amended by the Competition (Amendment) Act, 2007) to promote and sustain competition in markets. The Anti-trust laws in US and the Competition Act, 1998 of UK etc. Such legislations generally aim at prohibiting contracts, combinations and collusions among producers or traders which are in restraint of trade and other anticompetitive actions such as predatory pricing.

(ii) Narrow Money (M_1) = Currency with Public + Demand deposits with Banks + Other deposits with RBI
= 2,80,000+4,00,000+5,80,000
= ₹ 12,60,000 cr.

Question 9

(a) How is the nominal exchange rate determined? Explain. ***(3 Marks)***

(b) Discuss the salient features of bilateral trade agreements. ***(2 Marks)***

(c) Calculate Money Multiplier with the help of following information:

Reserve Ratio (r) = 10% Currency = ₹ 200 billion

Deposits = ₹ 400 billion

Excess Reserve = ₹ 800 million ***(3 Marks)***

(d) What do you mean about gross investment of a country? ***(2 Marks)***

Answer

(a) Determination of Nominal Exchange Rate: Usually, the supply of and demand for foreign exchange in the domestic foreign exchange market determines the external value of the domestic currency, or in other words, a country's exchange rate.

Individuals, institutions and governments participate in the foreign exchange market for a number of reasons. On the **demand side**, people desire foreign exchange to:

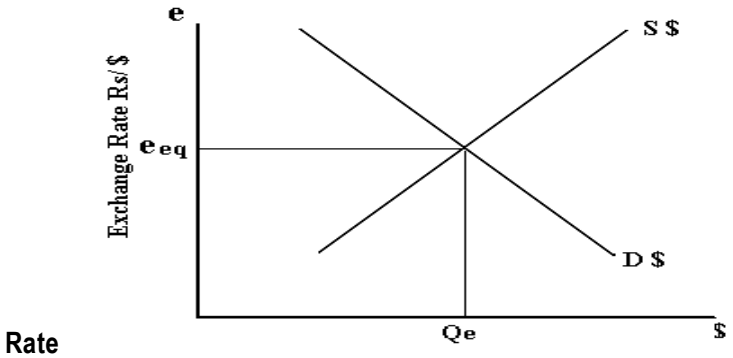
- Purchase goods and services from another country
- for unilateral transfers such as gifts, awards, grants, donations or endowments
- to make investment income payments abroad
- to purchase financial assets, stock or bonds abroad
- to open a foreign bank account
- to acquire direct ownership of real capital and
- for speculative and hedging activities related to risk taking or risk avoidance.

The participants on the **supply side** operate for similar reasons. Thus, the supply of foreign currency to the home country results from:

- purchases of home exports;
- unilateral transfers to home country;
- investment income payments;
- foreign direct investments and portfolio investments;
- placement of bank deposits and speculation.

Similar to any standard market, the exchange market also faces a downward sloping demand curve and an upward-sloping supply curve.

Determination of Nominal Exchange



Rate

The equilibrium rate of exchange is determined by the interaction of the supply and demand for a particular foreign currency.

(b) **Bilateral Trade Agreements** are agreements which set rules of trade between two countries, two trading blocs or a bloc and a country. These may be limited to certain goods and services or certain types of market entry barriers. E.g., EU-South Africa Free Trade Agreements; ASEAN–India Free Trade Area.

(c) **Calculation of Money Multiplier:**

Currency (C) = 200 billion

Deposits (D) = 400 billion

r = 10% = 0.1

Excess reserve =₹ 800 million = ₹ 0.8 billion

Money supply M = Currency + Deposits = ₹ 600bn.

Currency Ratio (c) $= \frac{C}{D} = \frac{200}{400} =$ **0.5**

Excess Reserve Ratio (e) = Excess reserve / Deposits = $\frac{0.8}{400\ billion}$ **=0.002 bn**

Money Multiplier (M) = $\frac{1+c}{r+e+c}$

$= \frac{1+0.5}{0.1+0.002+0.5}$

= **2.492**

(d) Gross Investment: Gross Investment is that part of country's total expenditure which is not consumed but added to the nation's fixed tangible assets and stocks. It consists of the acquisition of fixed assets and the accumulation of stocks. The stock accumulation is in the form of changes in stock of raw materials, fuels, finished goods and semi-finished goods awaiting completion.

Thus, gross investment includes:

- final expenditure on machinery and equipment,
- own account production of machinery and equipment,
- expenditure on construction,
- expenditure on changes in inventories, and
- expenditure on the acquisition of valuables such as, jewellery, works of art.

Question 10

(a) (i) How does the fiscal policy redress the inequalities of income and wealth of a country? ***(3 Marks)***

(ii) State the main objectives of World Trade Organisation (WTO). ***(2 Marks)***

(b) (i) Explain Friedman's Restatement of Quantity Theory with reference to demand for money? ***(3 Marks)***

(ii) Discuss the meaning and consequences of negative production externalities. ***(2 Marks)***

Answer

(a) (i) Redressal of inequalities of income & wealth through Fiscal Policy: Fiscal policy involves the use of government spending, taxation and borrowing to influence both the pattern of economic activity and level of growth of aggregate demand, output, and employment. Many developed and developing economies are facing the challenge of rising inequality in incomes and opportunities. The distribution of income in the society is influenced by fiscal policy both directly and indirectly. While current disposable incomes of individuals and corporates are dependent on direct taxes, the potential for future earnings is indirectly influenced by the nation's fiscal policy choices. Therefore, the tax structure has to be carefully framed to mitigate possible adverse impacts on production and efficiency, and also the redistributive fiscal policy and the extent of spending on redistribution should be consistent with the macro-economic policy objectives of the nation.

(ii) Objectives of World Trade Organization (WTO): The WTO has six key objectives:

1. to set and enforce rules for international trade,
2. to provide a forum for negotiating and monitoring further trade liberalization,
3. to resolve trade disputes,

4. to increase the transparency of decision-making processes,
5. to cooperate with other major international economic institutions involved in global economic management, and
6. to help developing countries benefit fully from the global trading system.

(b) (i) Friedman's Restatement of Quantity Theory with reference to Demand for money: Milton Friedman extended Keynes' speculative money demand within the framework of asset price theory. Friedman treats the demand for money as nothing more than the application of a more general theory of demand for capital assets. Demand for money is affected by the same factors as demand for any other asset, namely:

1. Permanent income.
2. Relative returns on assets.

Friedman maintains that it is *permanent income*–and not *current income* as in the Keynesian theory–that determines the demand for money. Permanent income which is Friedman's measure of wealth is the present expected value of all future income. To Friedman, money is a good as any other durable consumption good and its demand is a function of a great number of factors.

Friedman identifies following four determinants of the demand for money:

- The nominal demand for money is a function of total wealth, which is represented by permanent income divided by the discount rate, defined as the average return on the five asset classes in the monetarist theory world, namely money, bonds, equity, physical capital, and human capital.
- It is positively related to the price level, P. If the price level rises the demand for money increases and vice-versa.
- It rises if the opportunity costs of money holdings (i.e., returns on bonds and stock) decline and vice-versa.
- It is influenced by inflation, a positive inflation rate reduces the real value of money balances, thereby increasing the opportunity costs of money holdings.

(ii) Negative Production Externalities

Meaning:

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 aluminium discharges untreated waste water into a near-by river.

Consequences:

(a) It pollutes the water causing health hazards for people who use the water for

drinking and bathing.

(b) Pollution of river also affects fish output as there will be less catch for fisher men due to loss of fish resources.

The former is a case where a negative production externality is received in consumption and the latter presents a case of a negative production externality received in production.

Question 11

(a) How is aggregate consumption function affected, if:

(i) An impending war is expected to result in shortage of goods and an adoption of a rationing system,

(ii) Increased cost for steel, oil etc. are expected to result in higher prices for consumer goods, or

(iii) The leadership assures that economic policy is bringing the recession to an end.

(3 Marks)

(b) Discuss the three branch taxonomy of the role of Government in market economy.

(3 Marks)

(c) What is speculative motive for holding cash? ***(2 Marks)***

(d) Discuss the non-technical measures adopted by the countries with reference to (i) Trade related investment measures; and (ii) Price control measures. ***(2 Marks)***

OR

Discuss the salient features of Escalated tariff. ***(2 Marks)***

Answer

(a) Effect on Aggregate Consumption Function:

(i) If an impending war is expected, it will result in shortage of goods and an adoption of a rationing system is essential. As war happens supply will be less, and demand will be high which will lead to increase in prices thereby reducing the disposable income causing reduction in the aggregate consumption. **This will shift the aggregate consumption function downwards**.

(ii) The price of goods and services is determined by the interaction of supply and demand of goods and services. If cost of steel and oil prices go up, naturally the producer is not having any incentive to produce at the earlier levels. **This reduces the supply in the economy resulting in increased demand and prices will go up causing the aggregate consumption function to decline.**

(iii) The leadership is assuring that economic policy is bringing the recession to an end. But economic policies carry a gestation period to become effective and giving both

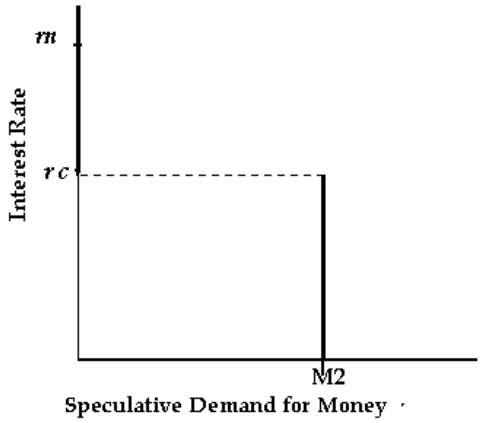
short-term and long-term result. **So mere assurance will not increase the aggregate consumption function** till the effect is realised by both the producer and consumer and the price level is maintained at an equilibrium level where the consumer can consume at the pre-recession stage and producer too.

(b) Three - branch taxonomy of the role of Government in market economy: Richard Musgrave, in his classic treatise 'The Theory of Public Finance' (1959), introduced the three-branch taxonomy of the role of government in a market economy. Musgrave believed that, for conceptual purposes, the functions of the government are to be separated into three, namely, **resource allocation**, (efficiency), **income redistribution** (fairness) and **macroeconomic stabilization**.

The allocation function aims to correct the sources of inefficiency in the economic system, while **the distribution** role ensures that the distribution of wealth and income is fair. Monetary and fiscal policies, the problems of macro-economic stability, maintenance of high levels of employment and price stability etc fall under **the stabilization function**.

Government intervention to direct the functioning of the economy is based on the belief that the objective of the economic system and the role of government is to improve the well-being of individuals and households. **The allocation and distribution functions are primarily microeconomic functions, while stabilization is a macro-economic function.**

(c) The Speculative Motive for Holding Cash: The speculative motive reflects people's desire to hold cash in order to be equipped to exploit any attractive investment opportunity requiring cash expenditure. The speculative demand for money and interest are inversely related. 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.



Individual's Speculative Demand for Money

So long as the current rate of interest is higher than the critical rate of interest, a typical wealth-holder would hold in his asset portfolio only government bonds, and if the current rate of interest is lower than the critical rate of interest, his asset portfolio would consist wholly of cash. When the current rate of interest is equal to the critical rate of interest, a wealth-holder is indifferent to holding either cash or bonds.

(d) Non-technical measures relate to trade requirements, for example, shipping requirements, custom formalities, trade rules, taxation policies, etc.

(i) **Trade-Related Investment Measures:** These measures include rules on local content requirements that mandate a specified fraction of a final good should be produced domestically.

- requirement to use certain minimum levels of locally made components, (25percentofcomponentsofautomobilestobesourceddomestically)
- restricting the level of imported components, and
- limiting the purchase or use of imported products to an amount related to the quantity or value of local products that it exports. (A firm may import only up to 75 % of its export earnings of the previous year)

(ii) **Price Control Measures:** Price control measures (including additional taxes and charges) are steps taken to control or influence the prices of imported goods in order to support the domestic price of certain products when the import prices of these goods are lower. These are also known as 'para-tariff' measures and include measures, other than tariff measures, that increase the cost of imports in a similar manner, i.e.by a fixed percentage or by a fixed amount.

Example: A minimum import price established for sulphur.

OR

Salient Features of escalated tariff: Escalated Tariff structure refers to the system wherein the nominal tariff rates on imports of manufactured goods are higher than the nominal tariff rates on intermediate inputs and raw materials, i.e., the tariff on a product increases as that product moves through the value-added chain.

For example, a four percent tariff on iron ore or iron ingots and twelve percent tariff on steel pipes. This type of tariff is discriminatory as it protects manufacturing industries in importing countries and dampens the attempts of developing manufacturing industries of exporting countries. This has special relevance to trade between developed countries and developing countries. Developing countries are thus forced to continue to be suppliers of raw materials without much value addition.