PAPER – 8 : FINANCIAL MANAGEMENT AND ECONOMICS FOR FINANCE

*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

SECTION – A: FINANCIAL MANAGEMENT

Question 1

(a) *Y Limited requires ₹ 50,00,000 for a new project. This project is expected to yield earnings before interest and taxes of ₹ 10,00,000. While deciding about the financial plan, the company considers the objective of maximizing earnings per' share. It has two alternatives to finance the project - by raising debt ₹ 5,00,000 or ₹ 20,00,000 and the balance, in each case, by issuing Equity Shares. The company's share is currently selling at ₹ 300, but is expected to decline to ₹ 250 in case the funds are borrowed in excess of ₹ 20,00,000. The funds can be borrowed at the rate of 12 percent upto ₹ 5,00,000 and at 10 percent over ₹ 5,00,000. The tax rate applicable to the company is 25 percent.*

Which form of financing should the company choose? ***(5 Marks)***

(b) *Following information relating to Jee Ltd. are given:*

Particulars	
Profit after tax	*₹ 10,00,000*
Dividend payout ratio	*50%*
Number of Equity Shares	*50,000*
Cost of Equity	*10%*
Rate of Return on Investment	*12%*

(i) *What would be the market value per share as per Walter's Model?*

(ii) *What is the optimum dividend payout ratio according to Walter's Model and Market value of equity share at that payout ratio?* ***(5 Marks)***

(c) *The following is the information of XML Ltd. relate to the year ended 31-03-2018 :*

Gross Profit	*20% of Sales*
Net Profit	*10% of Sales*
Inventory Holding period	*3 months*
Receivable collection period	*3 months*

Non-Current Assets to Sales	*1 : 4*
Non-Current Assets to Current Assets	*1 : 2*
Current Ratio	*2 : 1*
Non-Current Liabilities to Current Liabilities	*1 : 1*
Share Capital to Reserve and Surplus	*4 : 1*
Non-current Assets as on 31st March, 2017	*₹ 50,00,000*

Assume that:

(i) No change in Non-Current Assets during the year 2017-18

(ii) No depreciation charged on Non-Current Assets during the year 2017-18.

(iii) Ignoring Tax

You are required to Calculate cost of goods sold, Net profit, Inventory, Receivables and Cash for the year ended on 31st March, 2018

(d) From the following details relating to a project, analyse the sensitivity of the project to changes in the Initial Project Cost, Annual Cash Inflow and Cost of Capital :

Particulars	
Initial Project Cost	*₹ 2,00,00,000*
Annual Cash Inflow	*₹ 60,00,000*
Project Life	*5 years*
Cost of Capital	*10%*

To which of the 3 factors, the project is most sensitive if the variable is adversely affected by 10 ?

Cumulative Present Value Factor for 5 years for 10% is 3.791 and for 11% is 3.696.

(5 Marks)

Answer

(a) *Plan I* = Raising Debt of Rs 5 lakh + Equity of Rs 45 lakh.
Plan II = Raising Debt of ₹ 20 lakh + Equity of ₹ 30 lakh.

Calculation of Earnings per share (EPS)

Particulars	**Financial Plans**	
	Plan I ₹	**Plan II** ₹
Expected EBIT	10,00,000	10,00,000

Less: Interest (Working Note 1)	(60,000)	(2,10,000)
Earnings before taxes	9,40,000	7,90,000
Less: Taxes @ 25%	(2,35,000)	(1,97,500)
Earnings after taxes (EAT)	7,05,000	5,92,500
Number of shares (Working Note 2)	15,000	10,000
Earnings per share (EPS)	47	59.25

Financing Plan II (i.e. Raising debt of ₹ 20 lakh and issue of equity share capital of ₹ 30 lakh) is the option which maximises the earnings per share.

Working Notes:

1. Calculation of interest on Debt.

Plan I	(₹ 5,00,000 × 12%)		₹ 60,000
Plan II	(₹ 5,00,000 × 12%)	₹ 60,000	₹ 2,10,000
	(₹ 15,00,000 × 10%)	₹ 1,50,000	

2. Number of equity shares to be issued

$$\text{Plan I:} \quad \frac{\text{Rs. } 45,00,000}{\text{Rs. } 300 \text{ (Market Price of share)}} = 15,000 \text{ shares}$$

$$\text{Plan II:} \quad \frac{\text{Rs. } 30,00,000}{\text{Rs. } 300 \text{ (Market Price of share)}} = 10,000 \text{ shares}$$

(*Alternatively, interest on Debt for Plan II can be 20,00,000 X 10% i.e. ₹ 2,00,000. accordingly, the EPS for the Plan II will be ₹60)

(b) (i) Walter's model is given by –

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

Where,

P = Market price per share,

E = Earnings per share = ₹ 10,00,000 ÷ 50,000 = ₹ 20

D = Dividend per share = 50% of 20 = ₹ 10

r = Return earned on investment = 12%

K_e = Cost of equity capital = 10%

$$\therefore P = \frac{10 + (20 - 10) \times \frac{0.12}{0.10}}{0.10} = \frac{22}{0.10} = ₹ 220$$

(ii) According to Walter's model when the return on investment is more than the cost of equity capital, 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 payout ratio of zero, the market value of the company's share will be:-

$$P = \frac{0 + (20 - 0) \times \frac{0.12}{0.10}}{0.10} = \frac{24}{0.10} = ₹ 240$$

(c) Workings

$$\frac{\text{Non Current Assets}}{\text{Curent Assets}} = \frac{1}{2}$$

$$\text{Or } \frac{50,00,000}{\text{Curent Assets}} = \frac{1}{2}$$

So, Current Assets = ₹ 1,00,00,000

Now further,

$$\frac{\text{Non CurrentAssets}}{\text{Sales}} = \frac{1}{4}$$

$$\text{Or } \frac{50,00,000}{\text{Sales}} = \frac{1}{4}$$

So, Sales = ₹ 2,00,00,000

Calculation of Cost of Goods sold, Net profit, Inventory, Receivables and Cash:

(i) Cost of Goods Sold (COGS):

Cost of Goods Sold = Sales- Gross Profit

= ₹ 2,00,00,000 – 20% of ₹ 2,00,00,000

= ₹ 1,60,00,000

(ii) Net Profit = 10% of Sales = 10% of ₹ 2,00,00,000

= ₹ 20,00,000

(iii) Inventory:

$$\text{Inventory Holding Period} = \frac{12 \text{ Months}}{\text{Inventory Turnover Ratio}}$$

Inventory Turnover Ratio = 12/ 3 = 4

$$4 = \frac{\text{COGS}}{\text{Average Inventory}}$$

$$4 = \frac{1,60,00,000}{\text{Average Inventory}}$$

Average or Closing Inventory =₹ 40,00,000

(iv) Receivables :

$$\text{Receivable Collection Period} = \frac{12 \text{ Months}}{\text{Receivables Turnover Ratio}}$$

$$\text{Or Receivables Turnover Ratio} = 12/ 3 = 4 = \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$$

$$\text{Or } 4 = \frac{2,00,00,000}{\text{Average Accounts Receivable}}$$

So, Average Accounts Receivable/Receivables =₹ 50,00,000/-

(v) Cash:

Cash* = Current Assets* – Inventory- Receivables

Cash = ₹ 1,00,00,000 - ₹ 40,00,000 - ₹ 50,00,000

= ₹ 10,00,000

(it is assumed that no other current assets are included in the Current Asset)

(d) Calculation of NPV through Sensitivity Analysis

	₹
PV of cash inflows (₹ 60,00,000 × 3.791)	2,27,46,000
Initial Project Cost	2,00,00,000
NPV	27,46,000

Situation	NPV	Changes in NPV
Base(present)	₹ 27,46,000	
If initial project cost is varied adversely by 10%	(₹ 2,27,46,000 – ₹ 2,20,00,000*) = ₹ 7,46,000	$\frac{(₹ 27,46,000 - ₹ 7,46,000)}{₹ 27,46,000}$ = (72.83%)

If annual cash inflow is varied adversely by 10%	[₹ 54,00,000(revised cash flow) ** × 3.791) – (₹ 2,00,00,000)] = ₹ 4,71,400	$\frac{(₹\ 27,46,000 - ₹\ 4,71,400)}{₹\ 27,46,000}$ = 82.83%
If cost of capital is varied adversely by 10% i.e. it becomes 11%	(₹ 60,00,000 × 3.696)– ₹ 2,00,00,000 = ₹ 21,76,000	$\frac{(₹\ 27,46,000 - ₹\ 21,76,400)}{₹\ 27,46,000}$ = 20.76%

*Revised initial project Cost = 2,00,00,000 × 110% = 2,20,00,000

**Revised Cash Flow = ₹ 60,00,000 x (100 – 10) % = ₹ 54,00,000

Conclusion: Project is most sensitive to 'annual cash inflow'

Question 2

Following is the Balance Sheet of Soni Ltd. as on 31st March, 2018 :

Liabilities	*Amount in ₹*
Shareholder's Fund	
Equity Share Capital (₹ 10 each)	*25,00,000*
Reserve and Surplus	*5,00,000*
Non-Current Liabilities (12 Debentures)	*50,00,000*
Current Liabilities	*20,00,000*
Total	***1,00,00,000***
Assets	***Amount in ₹***
Non-Current Assets	*60,00,000*
Current Assets	*40,00,000*
Total	***1,00,00,000***

Additional Information:

(i) Variable Cost is 60% of Sales.

(ii) Fixed Cost p.a. excluding interest ₹ 20,00,000.

(iii) Total Asset Turnover Ratio is 5 times.

(iv) Income Tax Rate 25%

You are required to:

(1) Prepare Income Statement

(2) Calculate the following and comment:

(a) Operating Leverage

(b) Financial Leverage

(c) Combined Leverage ***(10 Marks)***

Answer

Workings:-

Total Assets = ₹ 1 crore

Total Asset Turnover Ratio i.e. $\frac{\text{Total Sales}}{\text{Total Assets}}$ = 5

Hence, Total Sales = ₹ 1 Crore × 5 = ₹ 5 crore

(1) Income Statement

	(₹ in crore)
Sales	5
Less: Variable cost @ 60%	3
Contribution	2
Less: Fixed cost (other than Interest)	0 .2
EBIT (Earnings before interest and tax)	1.8
Less: Interest on debentures (12% × 50 lakhs)	0 .06
EBT (Earning before tax)	1.74
Less: Tax 25%	0.435
EAT (Earning after tax)	1.305

(2) (a) **Operating Leverage**

$$\text{Operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{2}{1.8} = 1.11$$

It indicates fixed cost in cost structure. It indicates sensitivity of earnings before interest and tax (EBIT) to change in sales at a particular level.

(b) **Financial Leverage**

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{1.8}{1.74} = 1.03$$

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

(c) **Combined Leverage**

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}} = 1.11 \times 1.03 = 1.15$$

Or

$$\frac{\text{Contribution}}{\text{EBT}} = \frac{2}{1.74} = 1.15$$

The combined leverage studies the choice of fixed cost in cost structure and choice of debt in capital structure. It studies how sensitive the change in EPS is vis-à-vis change in sales.

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

Question 3

PD Ltd. an existing company, is planning to introduce a new product with projected life of 8 years. Project cost will be ₹ 2,40,00,000. At the end of 8 years no residual value will be realized. Working capital of ₹ 30,00,000 will be needed. The 100% capacity of the project is 2,00,000 units p.a. but the Production and Sales Volume is expected are as under :

Year	*Number of Units*
1	*60,000 units*
2.	*80,000 units*
3-5	*1,40,000 units*
6-8	*1,20,000 units*

Other Information:

(i) Selling price per unit ₹ 200

(ii) Variable cost is 40 of sales.

(iii) Fixed cost p.a. ₹ 30,00,000.

(iv) In addition to these advertisement expenditure will have to be incurred as under:

Year	*1*	*2*	*3-5*	*6-8*
Expenditure (`)	*50,00,000*	*25,00,000*	*10,00,000*	*5,00,000*

(v) Income Tax is 25%.

(vi) Straight line method of depreciation is permissible for tax purpose.

(vii) Cost of capital is 10%.

(viii) Assume that loss cannot be carried forward.

Present Value Table

Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
PVF@ 10	*0.909*	*0.826*	*0.751*	*0.683*	*0.621*	*0.564*	*0.513*	*0.467*

Advise about the project acceptability. ***(10 Marks)***

Answer

Computation of initial cash outlay(COF)

	(₹ in lakhs)
Project Cost	240
Working Capital	30
	270

Calculation of Cash Inflows(CIF):

Years	**1**	**2**	**3-5**	**6-8**
Sales in units	60,000	80,000	1,40,000	1,20,000
	₹	₹	₹	₹
Contribution (₹ 200 x 60% x No. of Unit)	72,00,000	96,00,000	1,68,00,000	1,44,00,000
Less: Fixed cost	30,00,000	30,00,000	30,00,000	30,00,000
Less: Advertisement	50,00,000	25,00,000	10,00,000	5,00,000
Less: Depreciation (24000000/8) = 30,00,000	30,00,000	30,00,000	30,00,000	30,00,000
Profit /(loss)	(38,00,000)	11,00,000	98,00,000	79,00,000
Less: Tax @ 25%	NIL	2,75,000	24,50,000	19,75,000
Profit/(Loss) after tax	(38,00,000)	8,25,000	73,50,000	59,25,000
Add: Depreciation	30,00,000	30,00,000	30,00,000	30,00,000
Cash inflow	(8,00,000)	38,25,000	1,03,50,000	89,25,000

(Note: Since variable cost is 40%, Contribution shall be 60% of sales)

Computation of PV of CIF

Year	**CIF**	**PV Factor**	**₹**
	₹	**@ 10%**	
1	(8,00,000)	0.909	(7,27,200)
2	38,25,000	0.826	31,59,450
3	1,03,50,000	0.751	77,72,850

4	1,03,50,000	0.683	70,69,050
5	1,03,50,000	0.621	64,27,350
6	89,25,000	0.564	50,33,700
7	89,25,000	0.513	45,78,525
8	89,25,000		
Working Capital	30,00,000	0.467	55,68,975
			3,88,82,700
	PV of COF		2,70,00,000
		NPV	**1,18,82,700**

***Recommendation**:* Accept the project in view of positive NPV.

Question 4

MN Ltd. has a current turnover of ₹ 30,00,000 p.a. Cost of Sale is 80% of turnover and Bad Debts are 2% of turnover, Cost of Sales includes 70% variable cost and 30% Fixed Cost, while company's required rate of return is 15%. MN Ltd. currently allows 15 days credit to its customer, but it is considering increase this to 45 days credit in order to increase turnover.

It has been estimated that this change in policy will increase turnover by 20%, while Bad Debts will increase by 1%. It is not expected that the policy change will result in an increase in fixed cost and creditors and stock will be unchanged.

Should MN Ltd. introduce the proposed policy? (Assume 360 days year) ***(10 Marks)***

Answer

Statement Showing Evaluation of Credit Policies

	Particulars	Present Policy	Proposed Policy
A.	Expected Contribution		
	(a) Credit Sales	30,00,000	36,00,000
	(b) *Less:* Variable Cost	16,80,000	20,16,000
	(c) Contribution	13,20,000	15,84,000
	(d) *Less:* Bad Debts	60,000	1,08,000
	(e) Contribution after Bad debt [(c)-(d)]	12,60,000	14,76,000
B.	Opportunity Cost of investment in Receivables	15,000	54,000
C.	Net Benefits [A-B]	12,45,000	14,22,000
D.	Increase in Benefit		1,77,000

Recommendation: Proposed Policy i.e credit from 15 days to 45 days should be implemented by NM Ltd since the net benefit under this policy are higher than those under present policy

Working Note: (1)

	Present Policy (₹)	Propose Policy (₹)
Sales	30,00,000	36,00,000
Cost of Sales (80% of sales)	24,00,000	28,80,000
Variable cost (70% of cost of sales)	16,80,000	20,16,000

2. Opportunity Costs of Average Investments

$$= \text{Variable Cost} \times \frac{\text{Collection Period}}{360} \times \text{Rate of Return}$$

Present Policy = $₹\ 24,00,000 \times \frac{45}{360} \times 15\% = ₹\ 54,000$

Proposed Policy = $₹\ 28,80,000 \times \frac{15}{360} \times 15\% = ₹\ 18,000$

Question 5

The following data relate to two companies belonging to the same risk class :

Particulars	***A Ltd.***	***B Ltd.***
Expected Net Operating Income	*₹ 18,00,000*	*₹ 18,00,000*
12% Debt	*₹ 54,00,000*	-
Equity Capitalization Rate	-	*18*

Required:

(a) Determine the total market value, Equity capitalization rate and weighted average cost of capital for each company assuming no taxes as per M.M. Approach.

(b) Determine the total market value, Equity capitalization rate and weighted average cost of capital for each company assuming 40% taxes as per M.M. Approach. ***(10 Marks)***

Answer

(a) Assuming no tax as per MM Approach.

Calculation of Value of Firms 'A Ltd.' and 'B Ltd' according to MM Hypothesis

Market Value of 'B Ltd' [Unlevered(u)]

Total Value of Unlevered Firm (V_u) = [NOI/k_e] = 18,00,000/0.18 = ₹ 1,00,00,000

K_e of Unlevered Firm (given) = 0.18

K_o of Unlevered Firm (Same as above = k_e as there is no debt) = 0.18

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

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

= ₹1,00,00,000

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

	Particulars	A Ltd.	B Ltd.
A.	Net Operating Income (NOI)	18,00,000	18,00,000
B.	Less: Interest on Debt (I)	6,48,000	-
C.	Earnings of Equity Shareholders (NI)	11,52,000	18,00,000
D	Overall Capitalization Rate (k_o)	0.18	0.18
E	Total Value of Firm ($V = NOI/k_o$)	1,00,00,000	1,00,00,000
F	Less: Market Value of Debt	54,00,000	-
G	Market Value of Equity (S)	46,00,000	1,00,00,000
H	Equity Capitalization Rate [k_e = NI /S]	0.2504	0.18
I	Weighted Average Cost of Capital [WACC (k_o)]* $k_o = (k_e \times S/V) + (k_d \times D/V)$	0.18	0.18

*Computation of WACC A Ltd

Component of Capital	Amount	Weight	Cost of Capital	WACC
Equity	46,00,000	0.46	0.2504	0.1152
Debt	54,00,000	0.54	0.12*	0.0648
Total	81,60,000			0.18

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

WACC = 18%

(b) Assuming 40% taxes as per MM Approach

Calculation of Value of Firms 'A Ltd.' and 'B Ltd' according to MM Hypothesis

Market Value of 'B Ltd' [Unlevered(u)]

Total Value of unlevered Firm (V_u) = [NOI (1 - t)/ke] = 18,00,000 (1 – 0.40)] / 0.18

= ₹60,00,000

K_e of unlevered Firm (given) = 0.18

K_o of unlevered Firm (Same as above = k_e as there is no debt) = 0.18

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

Total Value of Levered Firm (V_L) = V_u + (Debt× Tax)

= ₹ 60,00,000 + (54,00,000 × 0.4)

= ₹ 81,60,000

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

= 18% (i.e. $K_e = K_o$)

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

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

*Computation of WACC A Ltd

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

*K_d= 12% (1- 0.4) = 12% × 0.6 = 7.2%

WACC = 13.23%

Question 6

Answer the following:

(a) Explain in brief following Financial Instruments:

(i) Euro Bonds

(ii) Floating Rate Notes

(iii) Euro Commercial paper

(iv) Fully Hedged Bond ***(1 x 4 = 4 Marks)***

(b) Discuss the Advantages of Leasing. ***(4 Marks)***

(c) Write two main objectives of Financial Management.

OR

Write two main reasons for considering risk in Capital Budgeting decisions. ***(2 Marks)***

Answer

(a) (i) **Euro bonds**: Euro bonds are debt instruments which are not denominated in the currency of the country in which they are issued. E.g. a Yen note floated in Germany.

(ii) **Floating Rate Notes:** Floating Rate Notes: are issued up to seven years maturity. Interest rates are adjusted to reflect the prevailing exchange rates. They provide cheaper money than foreign loans.

(iii) **Euro Commercial Paper(ECP):** ECPs are short term money market instruments. They are for maturities less than one year. They are usually designated in US Dollars.

(iv) **Fully Hedged Bond:** In foreign bonds, the risk of currency fluctuations exists. Fully hedged bonds eliminate the risk by selling in forward markets the entire stream of principal and interest payments.

(b) (i) **Lease may low cost alternative:** Leasing is alternative to purchasing. As the lessee is to make a series of payments for using an asset, a lease arrangement is similar to a debt contract. The benefit of lease is based on a comparison between leasing and buying an asset. Many lessees find lease more attractive because of low cost.

(ii) **Tax benefit**: In certain cases tax benefit of depreciation available for owning an asset may be less than that available for lease payment

(iii) **Working capital conservation:** When a firm buy an equipment by borrowing from a bank (or financial institution), they never provide 100% financing. But in case of lease one gets normally 100% financing. This enables conservation of working capital.

(iv) **Preservation of Debt Capacity**: So, operating lease does not matter in computing debt equity ratio. This enables the lessee to go for debt financing more easily. The access to and ability of a firm to get debt financing is called debt capacity (also, reserve debt capacity).

(v) **Obsolescence and Disposal:** After purchase of leased asset there may be technological obsolescence of the asset. That means a technologically upgraded asset with better capacity may come into existence after purchase. To retain competitive advantage the lessee as user may have to go for the upgraded asset.

(c) Two Main Objective of Financial Management

Two objectives of financial management are:

(i) Profit Maximisation

It has traditionally been argued that the primary objective of a company is to earn profit; hence the objective of financial management is also profit maximisation.

Wealth / Value Maximization

Wealth / Value Maximization Model. Shareholders wealth are the result of cost benefit analysis adjusted with their timing and risk i.e. time value of money. This is the real objective of Financial Management. So,

Wealth = Present Value of benefits – Present Value of Costs

Or

(c) Main reasons for considering risk in capital budgeting decisions:

Main reasons for considering 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 the Cash Inflows.

SECTION – B: ECONOMICS FOR FINANCE

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

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

Question 7

(a) How the Government intervenes to ensure stability in price level? ***(2 Marks)***

(b) Explain the Concept of Gross National Product at market price (GNP mp). ***(2 Marks)***

(c) The RBI Published the following data as on 31st March, 2018. You are required to compute M4:

	(₹ in crores)
Currency with the public	*1,12,206.6*
Demand Deposits with Banks	*1,93,300.4*
Net Time Deposits with Banks	*2,67,310.2*
Other Deposits of RBI	*614.8*
Post Office Savings Deposits	*277.5*
Post Office National Savings Certificates (NSCs)	*110.5*

(3 Marks)

(d) The table given below shows the number of labour hours required to produce Sugar and Rice in two countries X and Y:

Commodity	*Country X*	*Country Y*
1 Unit of Sugar	*2.0*	*5.0*
1 unit of Rice	*4.0*	*2.5*

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

(ii) Which country has absolute advantage in production of Sugar?

(iii) Which country has absolute advantage in production of Rice? ***(3 Marks)***

Answer

(a) Government intervenes to ensure price stability and thus regulate aggregate demand with two policy instruments namely, monetary (credit) policy and fiscal (budgetary) policy. Monetary policy attempts to stabilise aggregate demand in the economy by influencing the availability and cost of money, i.e., the rate of interest. Fiscal policy, on the other hand, aims at influencing aggregate demand by altering tax, public expenditure and public debt of the government. When total spending is too low, the government may increase its spending and/or lower taxes to reduce unemployment and the central bank

may lower interest rates. When total spending is excessive, the government may cut its spending and/or raise taxes to foster price stability and the central bank may raise interest rates. In addition, the government may initiate regulatory measures such as price ceiling and price floors.

(b) Gross National Product (GNP) is a measure of the market value of all final economic goods and services, gross of depreciation, produced within the domestic territory of a country by normal residents during an accounting year plus net factor incomes from abroad. Thus, GNP includes earnings of Indian corporations overseas and Indian residents working overseas.

$$\mathbf{GNP_{MP} = GDP_{MP} + Net\ Factor\ Income\ from\ Abroad}$$

Net factor income from abroad is the difference between the income received from abroad for rendering factor services by the normal residents of the country to the rest of the world and income paid for the factor services rendered by non- residents in the domestic territory of a country.

(c) M4 = Currency and coins with the people + demand deposits with the banks (Current and Saving accounts) + other deposits with the RBI + Net time deposits with the banking system + Total deposits with the Post Office Savings (excluding National Savings Certificates).

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

(d) **(i)** Productivity of labour (output per labour hour = the volume of output produced per unit of labour input)

= output / input of labour hours

Output of commodity	Units in Country X	Units in Country Y
Sugar	0.5	0.20
Rice	0.25	0.40

(ii) A country has an **absolute advantage** in producing a good over another country if it requires fewer resources to produce that good. Since one hour of labour time produces 0.5 units of sugar in country X against 0.20 units in country Y, Country X has absolute advantage in production of sugar.

(iii) Since one hour of labour time produces 0.40 units of rice in country Y against 0.25 units in country X, Country Y has absolute advantage in production of rice.

Question 8

(a) In a two sector model Economy, the business sector produces 7500 units at an average price of ₹7.

(i) What is the money value of output?

(ii) What is the money income of Households?

(iii) If households spend 75 of their Income, what is the total consumer expenditure?

(iv) What is the total money revenue received by the business sector?

(v) What should happen to the level of output? ***(5 Marks)***

(b) (i) Define the Contractionary Fiscal Policy. What measures under this policy are to be adopted to eliminate the inflationary gap? ***(3 Marks)***

(ii) Explain the role of Monetary Policy Committee (MPC) in India. ***(3 Marks)***

Answer

(a) (i) The money value of output equals total output times the average price per unit. The money value of output is (75000×7) = ₹ 52,500

(ii) In a two sector economy, households receive an amount equal to the money value of output. Therefore, the money income of households is the same as the money value of output i.e. ₹ 52,500

(iii) Total spending by households (₹ 52,500 × .75) i.e. ₹ 39,375

(iv) The total money revenues received by the business sector is equal to aggregate spending by households ie. ₹ 39,375

(v) The circular flow will be balanced and therefore in equilibrium when the injections are equal to the leakages. The saving by the household sector would imply leakage or withdrawal of money (equal to saving) from the circular flow of income. If at any time intended saving is greater than intended investment, (not given; assumed = zero) this would mean that people are spending lesser volume of money on consumption. Here, the business sector makes payments of ₹ 52,500 to produce output, whereas the households purchase only output worth ₹ 39,375 of what is produced. Therefore, the business sector has unsold inventories valued at ₹ 13,125. Consequently, the firms would decrease their production which would lead to a fall in output and income of the household.

(b) (i) 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 can be achieved either by:

1. Decrease in government spending: With decrease in government spending, the total amount of money available in the economy is reduced which is turns trim down the aggregate demand.
2. Increase in personal income taxes and/or business taxes: An increase in personal income taxes reduces disposable income 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.
3. A combination of decrease in government spending and increase in personal income taxes and/or business taxes.

(ii) Monetary Policy Committee (MPC) constituted by the Central Government is an empowered six-member committee with RBI Governor as the chairperson. Under the Monetary Policy Framework Agreement, the RBI will be responsible for price stability and for containing inflation targets at 4% (with a standard deviation of 2%) in the medium term. The committee is answerable to the Government of India if the inflation exceeds the range prescribed for three consecutive months. MPC has complete control over monetary policy decisions to ensure economic growth and price stability. The MPC decides the changes to be made to the policy rate (repo rate) so as to contain inflation within the target level specified to it by the central government. Fixing of the benchmark policy interest rate (repo rate) is made in a more consultative and participative manner and on the basis of majority vote by this panel of experts. This has added lot of value and transparency to monetary policy decisions.

Question 9

(a) (i) Explain with example how Ad Valorem Tariff is levied. ***(3 Marks)***

(ii) What is allocation function of Fiscal-Policy? ***(2Marks)***

(b) (i) What are the modes of Foreign Direct Investment (FDI)? ***(3 Marks)***

(ii) Calculate the Average Propensity to Consume (APC) and Average Propensity to Save (APS) from the following data:

Income	***Consumption***
₹4,000	*₹3,000*

(2 Marks)

Answer

(a) (i) An ad valorem tariff is a duty or other charges levied on an import item on the basis of its value and not on the basis of its quantity, size, weight, or any other factor.

It is levied as a constant percentage of the monetary value of one unit of the imported good. For example, a 20% ad valorem tariff on a computer generates ₹2,000/ government revenue from tariff on each imported computer priced at ₹10,000/ in the world market. If the price of computer rises to ₹ 20,000, then it generates a tariff of ₹ 4,000/

(ii) Allocation function of fiscal policy is concerned with the process by which the total resources of the economy are divided among various uses as well as for provision of an optimum mix of various social goods (both public goods and merit goods). The allocation function also involves the reallocation of society's resources from private use to public use.

The resource allocation role of government's fiscal policy focuses on the potential for the government to improve economic performance and welfare through its expenditure and tax policies. It also determines who and what will be taxed as well as how and on what the government revenue will be spent.

(b) (i) Modes of foreign direct investment (FDI)

Foreign direct investment is defined as the process whereby the resident of one country (i.e. home country) acquires more than 10 percent ownership of an asset in another country (i.e. the host country) and such movement of capital involves ownership, control as well as management of the asset in the host country. Various modes are:

(i) Opening of a subsidiary or associate company in a foreign country,

(ii) Equity injection into an overseas company,

(iii) Acquiring a controlling interest in an existing foreign company,

(iv) Mergers and acquisitions (M&A)

(v) Joint venture with a foreign company.

(vi) Green field investment (establishment of a new overseas affiliate for freshly starting production by a parent company).

(b) (ii) The average propensity to consume (APC) is the ratio of consumption expenditures (C) to disposable income (DI), or APC =C / DI.

The average propensity to save (APS) is the ratio of savings to disposable income or APS =S / DI

APC= 3000/4000= 0.75.

APS= 1000/4000= 0.25.

Question 10

(a) (i) Define the market failure. Why do markets fail? ***(3 Marks)***

(ii) Mention the general characteristics of Money. ***(2 Marks)***

(b) (i) How do Governments correct market failure resulting from demerit Goods? ***(3 Marks)***

(ii) The Nominal Exchange rate of India is ₹ 56/1 $, Price Index in India is 116 and Price Index in USA is 112. What will be the Real Exchange Rate of India? ***(2 Marks)***

Answer

(a) (i) Market failure is a situation in which the free market with an unrestricted price system determined by forces of supply and demand leads to misallocation of society's scarce resources in the sense that there is either overproduction or underproduction of particular goods and services leading to a less than optimal outcome. The major reasons for market failure and economic inefficiency include:

(i) Though perfectly competitive markets work efficiently, most often the prerequisites of competition are unlikely to be present in an economy.

(ii) Market power of firms enables them to act as price makers and keep the level of prices and output that give them positive economic profits.

(iii) Externalities hinder the ability of market prices to convey accurate information about how much to produce and how much to buy

(iv) Public goods are not produced at all or produced less than optimal quantities due to its special characteristics such as indivisibility, non - excludability and non-rivalry.

(v) Free rider problem causing overuse, degradation and depletion of common resources

(vi) Information failure manifest in asymmetric information, adverse selection and moral hazard.

(ii) There are some general characteristics that money should possess in order to make it serve its functions as money. Money should be:

- Generally acceptable
- Durable or long-lasting
- Effortlessly recognizable
- Difficult to counterfeit i.e. not easily reproducible by people
- Relatively scarce, but has elasticity of supply
- Portable or easily transported

- Possessing uniformity, and
- Divisible into smaller parts in usable quantities or fractions without losing value.

(b) (i) Demerit goods are deemed socially undesirable and their consumption imposes considerable negative externalities on the society as a whole. Examples of demerit goods are cigarettes, alcohol etc. Since demerit goods are clear cases of market failure, the government intervenes in the marketplace to discourage their production and consumption mainly by the following methods:

(i) At the extreme, the government may enforce complete ban on a demerit good; e.g. intoxicating drugs. In such cases, the possession, trading or consumption of the good is made illegal.

(ii) Impose unusually high taxes on producing or purchasing the demerit goods making them very costly and unaffordable to many.

(iii) Through persuasion which is mainly intended to be achieved by negative advertising campaigns which emphasize the dangers associated with consumption of demerit goods and granting of subsidies for such advertisements.

(iv) Through legislations that prohibit the advertising or promotion of demerit goods in whatsoever manner.

(v) Strict regulations of the market for the good may be put in place so as to limit access to the good, especially by vulnerable groups such as children and adolescents. Restrictions in terms of a minimum age may be stipulated at which young people are permitted to buy cigarettes and alcohol.

(vi) Regulatory controls in the form of spatial restrictions e.g. smoking in public places, sale of tobacco to be away from schools, and time restrictions under which sale at particular times during the day is banned.

(ii) The 'real exchange rate' 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. Thus it incorporates changes in prices

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

$$= 56 \times \frac{116}{112} = 58$$

Question 11

(a) (i) Explain the different mechanism of monetary policy which influences the price-level and national income. ***(3 Marks)***

(ii) Explain the Monetary Policy Framework Agreement. ***(2 Marks)***

(b) (i) Distinguish between Personal Income and Disposable Personal Income. ***(3 Marks)***

(ii) "World Trade Organisation (WTO) has a three-tier system of decision making." Explain. ***(2 Marks)***

OR

Explain the concept of Social Costs.

Answer

(a) (i) The process or channels through which the evolution of monetary aggregates affects the level of product and prices is known as 'monetary transmission mechanism'. There are mainly four different mechanisms, namely, the interest rate channel, the exchange rate channel, the quantum channel, and the asset price channel.

The interest rate channel: A contractionary monetary policy-induced increase in interest rates increases the cost of capital and the real cost of borrowing for firms and households with the result that they cut back on their investment expenditures and durable goods consumption expenditures respectively. A decline in aggregate demand results in a fall in aggregate output and employment. Conversely, an expansionary monetary policy induced decrease in interest rates will have the opposite effect through decreases in cost of capital for firms and cost of borrowing for households.

The exchange rate channel: The exchange rate channel works through expenditure switching between domestic and foreign goods. Appreciation of the domestic currency makes domestically produced goods more expensive compared to foreign-produced goods. This causes net exports to fall; correspondingly domestic output and employment also fall.

The quantum channel (e.g., relating to money supply and credit) Two distinct credit channels: the bank lending channel and the balance sheet channel- also allow the effects of monetary policy actions to propagate through the real economy. Credit channel operates by altering access of firms and households to bank credit.

A direct effect of monetary policy on the firm's balance sheet comes about when an increase in interest rates works to increase the payments that the firm must make to service its floating rate debts. An indirect effect sets in, when the same increase in interest rates works to reduce the capitalized value of the firm's long-lived assets.

The asset price channel: Asset prices respond to monetary policy changes and consequently impact output, employment and inflation. A policy-induced increase in the short-term nominal interest rates makes debt instruments more attractive than equities in the eyes of investors leading to a fall in equity prices, erosion in household financial wealth, fall in consumption, output, and employment.

(ii) The Reserve Bank of India (RBI) Act, 1934 was amended in 2016, for giving a statutory backing to the Monetary Policy Framework Agreement. It is an agreement reached between the Government of India and the RBI on the maximum tolerable inflation rate that the RBI should target to achieve price stability. The amended RBI Act (2016) provides for a statutory basis for the implementation of the 'flexible inflation targeting framework' by abandoning the 'multiple indicator' approach. The inflation target is to be set by the Government of India, in consultation with the Reserve Bank, once in every five years. Accordingly,

- the Central Government has notified 4 per cent Consumer Price Index (CPI) inflation as the target for the period from August 5, 2016 to March 31, 2021 with the upper tolerance limit of 6 per cent and the lower tolerance limit of 2 per cent.
- The RBI is mandated to publish a Monetary Policy Report every six months, explaining the sources of inflation and the forecasts of inflation for the coming period of six to eighteen months.

(b) (i) Personal Income is the income received by the household sector including Non-Profit Institutions Serving Households. Thus, while national income is a measure of income earned and personal income is a measure of actual current income receipts of persons from all sources which may or may not be earned from productive activities during a given period of time. In other words, it is the income 'actually paid out' to the household sector, but not necessarily earned. Examples of this include transfer payments such as social security benefits, unemployment compensation, welfare payments etc. Individuals also contribute income which they do not actually receive; for example, undistributed corporate profits and the contribution of employers to social security. Personal income forms the basis for consumption expenditures and is derived from national income as follows:

PI = NI + income received but not earned - income earned but not received.

Disposable Personal Income (DI): Disposable personal income is a measure of amount of the money in the hands of the individuals that is available for their consumption or savings. Disposable personal income is derived from personal income by subtracting the direct taxes paid by individuals and other compulsory payments made to the government.

DI = PI - Personal Income Taxes

(ii) The World Trade Organization has a three- tier system of decision making. The WTO's top level decision-making body is the Ministerial Conference which can take decisions on all matters under any of the multilateral trade agreements. The Ministerial Conference meets at least once every two years. The next level is the General Council which meets several times a year at the Geneva headquarters. The General Council also meets as the Trade Policy Review Body and the Dispute Settlement Body. At the next level, the Goods Council, Services Council and

Intellectual Property (TRIPS) Council report to the General Council. These councils are responsible for overseeing the implementation of the WTO agreements in their respective areas of specialisation. The three also have subsidiary bodies. Numerous specialized committees, working groups and working parties deal with the individual agreements.

Or

Social costs refer to the total costs to the society on account of a production or consumption activity. Social costs are private costs borne by individuals directly involved in a transaction together with the external costs borne by third parties not directly involved in the transaction. Social costs represent the true burdens carried by society in monetary and non-monetary terms.