

PAPER – 8A: FINANCIAL MANAGEMENT AND ECONOMICS FOR FINANCE

PART A: FINANCIAL MANAGEMENT

QUESTIONS

Ratio Analysis

1. Following figures are available in the books Tirupati Ltd.

Fixed assets turnover ratio	8 times
Capital turnover ratio	2 times
Inventory Turnover	8 times
Receivable turnover	4 times
Payable turnover	6 times
G P Ratio	25%

Gross profit during the year amounts to ₹ 8,00,000. There is no long-term loan or overdraft. Reserve and surplus amount to ₹ 2,00,000. Ending inventory of the year is ₹ 20,000 above the beginning inventory.

Required:

CALCULATE various assets and liabilities and PREPARE a Balance sheet of Tirupati Ltd.

Cost of Capital

2. Navya Limited wishes to raise additional capital of ₹10 lakhs for meeting its modernisation plan. It has ₹ 3,00,000 in the form of retained earnings available for investments purposes. The following are the further details:

Debt/ equity mix	40%/60%
Cost of debt (before tax)	
Upto ₹ 1,80,000	10%
Beyond ₹ 1,80,000	16%
Earnings per share	₹ 4
Dividend pay out	₹ 2
Expected growth rate in dividend	10%
Current market price per share	₹ 44
Tax rate	50%

Required:

- (i) To DETERMINE the pattern for raising the additional finance.

- (ii) To CALCULATE the post-tax average cost of additional debt.
- (iii) To CALCULATE the cost of retained earnings and cost of equity, and
- (iv) To DETERMINE the overall weighted average cost of capital (after tax).

Capital Structure Decisions

3. Company P and Q are identical in all respects including risk factors except for debt/equity, company P having issued 10% debentures of ₹ 18 lakhs while company Q is unlevered. Both the companies earn 20% before interest and taxes on their total assets of ₹ 30 lakhs. Assuming a tax rate of 50% and capitalization rate of 15% from an all-equity company.

Required:

CALCULATE the value of companies' P and Q using (i) Net Income Approach and (ii) Net Operating Income Approach.

Leverage

4. CALCULATE the operating leverage, financial leverage and combined leverage from the following data under Situation I and II and Financial Plan A and B:

Installed Capacity	4,000 units
Actual Production and Sales	75% of the Capacity
Selling Price	₹30 per unit
Variable Cost	₹15 per unit

Fixed Cost:

Under Situation I	₹ 15,000
Under Situation-II	₹ 20,000

Capital Structure:

	Financial Plan	
	A (₹)	B (₹)
Equity	10,000	15,000
Debt (Rate of Interest at 20%)	10,000	5,000
	20,000	20,000

Capital Budgeting

5. A company has to make a choice between two projects namely A and B. The initial capital outlay of two Projects are ₹ 1,35,000 and ₹ 2,40,000 respectively for A and B. There will be no scrap value at the end of the life of both the projects. The opportunity Cost of Capital of the company is 16%. The annual incomes are as under:

Year	Project A (₹)	Project B (₹)	Discounting factor @ 16%
1	--	60,000	0.862
2	30,000	84,000	0.743
3	1,32,000	96,000	0.641
4	84,000	1,02,000	0.552
5	84,000	90,000	0.476

Required:

CALCULATE for each project:

- (i) Discounted payback period
- (ii) Profitability index
- (iii) Net present value

DECIDE which of these projects should be accepted?

Management of Payables (Creditors)

6. A Ltd. is in the manufacturing business and it acquires raw material from X Ltd. on a regular basis. As per the terms of agreement the payment must be made within 40 days of purchase. However, A Ltd. has a choice of paying ₹ 98.50 per ₹ 100 it owes to X Ltd. on or before 10th day of purchase.

Required:

EXAMINE whether A Ltd. should accept the offer of discount assuming average billing of A Ltd. with X Ltd. is ₹ 10,00,000 and an alternative investment yield a return of 15% and company pays the invoice.

Financing of Working Capital

7. Following information is forecasted by the Puja Limited for the year ending 31st March, 20X8:

	Balance as at 1 st April, 20X7 (₹)	Balance as at 31 st March, 20X8 (₹)
Raw Material	45,000	65,356
Work-in-progress	35,000	51,300
Finished goods	60,181	70,175
Debtors	1,12,123	1,35,000
Creditors	50,079	70,469

Annual purchases of raw material (all credit)		4,00,000
Annual cost of production		7,50,000
Annual cost of goods sold		9,15,000
Annual operating cost		9,50,000
Annual sales (all credit)		11,00,000

You may take one year as equal to 365 days.

Required:

CALCULATE

- (i) Net operating cycle period.
- (ii) Number of operating cycles in the year.
- (iii) Amount of working capital requirement using operating cycles.

Risk Analysis in Capital Budgeting

8. From the following details relating to a project, analyse the sensitivity of the project to changes in initial project cost, annual cash inflow and cost of capital:

Initial Project Cost (₹)	1,20,000
Annual Cash Inflow (₹)	45,000
Project Life (Years)	4
Cost of Capital	10%

Required:

EXAMINE which of the three factors, the project is most sensitive? (Use annuity factors: for 10% 3.169 and 11% 3.103).

Dividend Decisions

- 9 The following information relates to Navya Ltd:

Earnings of the company	₹ 20,00,000
Dividend pay-out ratio	60%
No. of Shares outstanding	4,00,000
Rate of return on investment	15%
Equity capitalization rate	12%

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.

Lease Financing

10. A Company is planning to acquire a machine costing ₹5,00,000. Effective life of the machine is 5 years. The Company is considering two options, one is to take the machine on lease and the other is to borrow ₹ 5,00,000 from its bankers at 10% interest p.a. The Principal amount of loan will be paid in 5 equal instalments to be paid annually. The machine will be sold at ₹50,000 at the end of 5th year. Following further information are given:
- (i) Principal, interest, lease rentals are payable on the last day of each year.
 - (ii) The machine will be fully depreciated over its effective life.
 - (iii) Tax rate is 30% and after tax. Cost of capital is 8%.

Required:

COMPUTE the lease rentals payable which will make the firm indifferent to the loan option.

11. **Miscellaneous**

- (i) "The profit maximization is not an operationally feasible criterion. DISCUSS
- (ii) EXPLAIN the followings:
 - (a) Bridge Finance
 - (b) Floating Rate Bonds
 - (c) Packing Credit.
- (iii) "Financial Leverage is a double-edged sword" DISCUSS

SUGGESTED HINTS/ANSWERS

1. (a) $G.P. \text{ ratio} = \frac{\text{Gross Profit}}{\text{Sales}} = 25\%$
- $$\text{Sales} = \frac{\text{Gross Profit}}{25} \times 100 = \frac{\text{₹ } 8,00,000}{25} \times 100 = \text{₹ } 32,00,000$$
- (b) Cost of Sales = Sales – Gross profit
- $$= \text{₹ } 32,00,000 - \text{₹ } 8,00,000$$
- $$= \text{₹ } 24,00,000$$
- (c) Receivable turnover = $\frac{\text{Sales}}{\text{Receivables}} = 4$

$$= \text{Receivables} = \frac{\text{Sales}}{4} = \frac{\text{₹}32,00,000}{4} = \text{₹}8,00,000$$

(d) Fixed assets turnover = $\frac{\text{Cost of Sales}}{\text{Fixed Assets}} = 8$

Fixed assets = $\frac{\text{Cost of Sales}}{8} = \frac{\text{₹}24,00,000}{8} = \text{₹}3,00,000$

(e) Inventory turnover = $\frac{\text{Cost of Sales}}{\text{Average Stock}} = 8$

Average Stock = $\frac{\text{Cost of Sales}}{8} = \frac{\text{₹}24,00,000}{8} = \text{₹}3,00,000$

Average Stock = $\frac{\text{Opening Stock} + \text{Closing Stock}}{2}$

Average Stock = $\frac{\text{Opening Stock} + \text{Opening Stock} + 20,000}{2}$

Average Stock = Opening Stock + ₹ 10,000

Opening Stock = Average Stock - ₹ 10,000

= ₹ 3,00,000 - ₹ 10,000

= ₹ 2,90,000

Closing Stock = Opening Stock + ₹ 20,000

= ₹ 2,90,000 + ₹ 20,000

= ₹ 3,10,000

(f) Payable turnover = $\frac{\text{Purchases}}{\text{Payables}} = 6$

Purchases = Cost of Sales + Increase in Stock

= ₹ 24,00,000 + ₹ 20,000

= ₹ 24,20,000

Payables = $\frac{\text{Purchase}}{6} = \frac{\text{₹}24,20,000}{6} = \text{₹}4,03,333$

(g) Capital turnover = $\frac{\text{Cost of Sales}}{\text{Capital Employed}} = 2$

$$\begin{aligned} \text{Capital Employed} &= \frac{\text{Cost of Sales}}{2} = \frac{\text{₹ } 24,00,000}{2} = \text{₹ } 12,00,000 \\ \text{(h) Share Capital} &= \text{Capital Employed} - \text{Reserves \& Surplus} \\ &= \text{₹ } 12,00,000 - \text{₹ } 2,00,000 = \text{₹ } 10,00,000 \end{aligned}$$

Balance Sheet of Tirupati Ltd as on.....

Liabilities	Amount (₹)	Assets	Amount (₹)
Share Capital	10,00,000	Fixed Assets	3,00,000
Reserve & Surplus	2,00,000	Closing Inventories	3,10,000
Payables	4,03,333	Receivables	8,00,000
		Other Current Assets	1,93,333
	16,03,333		16,03,333

(Fixed Asset turnover, inventory turnover capital turnover is calculated on cost of sales)

2. (i) Pattern of Raising Additional Finance

$$\text{Equity} = 10,00,000 \times 60/100 = \text{₹ } 6,00,000$$

$$\text{Debt} = 10,00,000 \times 40/100 = \text{₹ } 4,00,000$$

Capital structure after Raising Additional Finance

Sources of fund	Amount (₹)
Shareholder's funds	
Equity capital (6,00,000 – 3,00,000)	3,00,000
Retained earnings	3,00,000
Debt at 10% p.a.	1,80,000
Debt at 16% p.a. (4,00,000 – 1,80,000)	2,20,000
Total funds	10,00,000

(ii) Post-tax Average Cost of Additional Debt

$K_d = I(1 - t)$, where ' K_d ' is cost of debt, ' I ' is interest and ' t ' is tax rate.

$$\text{On ₹ } 1,80,000 = 10\% (1 - 0.5) = 5\% \text{ or } 0.05$$

$$\text{On ₹ } 2,20,000 = 16\% (1 - 0.5) = 8\% \text{ or } 0.08$$

Average Cost of Debt (Post tax) i.e.

$$K_d = \frac{(1,80,000 \times 0.05) + (2,20,000 \times 0.08)}{4,00,000} \times 100 = 6.65\%$$

(iii) Cost of Retained Earnings and Cost of Equity applying Dividend Growth Model

$$K_e = \frac{D_1}{P_0} + g \quad \text{or} \quad \frac{D_0(1+g)}{P_0} + g$$

$$\text{Then, } K_e = \frac{2(1.1)}{44} + 0.10 = \frac{2.2}{44} + 0.10 = 0.15 \text{ or } 15\%$$

(iv) Overall Weighted Average Cost of Capital (WACC) (After Tax)

Particulars	Amount (₹)	Weights	Cost of Capital	WACC
Equity (including retained earnings)	6,00,000	0.60	15%	9.00
Debt	4,00,000	0.40	6.65%	2.66
Total	10,00,000	1.00		11.66

3. (i) Valuation under Net Income Approach

Particulars	P Amount (₹)	Q Amount (₹)
Earnings before Interest & Tax (EBIT) (20% of ₹ 30,00,000)	6,00,000	6,00,000
Less: Interest (10% of ₹ 18,00,000)	1,80,000	
Earnings before Tax (EBT)	4,20,000	6,00,000
Less: Tax @ 50%	2,10,000	3,00,000
Earnings after Tax (EAT) (available to equity holders)	2,10,000	3,00,000
Value of equity (capitalized @ 15%)	14,00,000 (2,10,000 × 100/15)	20,00,000 (3,00,000 × 100/15)
Add: Total Value of debt	18,00,000	Nil
Total Value of Company	32,00,000	20,00,000

(ii) Valuation of Companies under Net Operating Income Approach

Particulars	P Amount (₹)	Q Amount (₹)
Capitalisation of earnings at 15% $\left(\frac{₹6,00,000(1-0.5)}{0.15} \right)$	20,00,000	20,00,000

Less: Value of debt {18,00,000 (1 – 0.5)}	9,00,000	Nil
Value of equity	11,00,000	20,00,000
Add: Total Value of debt	18,00,000	Nil
Total Value of Company	29,00,000	20,00,000

4. (i) **Operating Leverages:**

Particulars	Situation-I (₹)	Situation-II (₹)
Sales (S) (3,000 units @ ₹ 30/- per unit)	90,000	90,000
Less: Variable Cost (VC) @ ₹15 per unit	<u>(45,000)</u>	<u>(45,000)</u>
Contribution (C)	45,000	45,000
Less: Fixed Cost (FC)	<u>15,000</u>	<u>20,000</u>
EBIT	<u>30,000</u>	<u>25,000</u>
Operating Leverage $\left(\frac{C}{EBIT} \right)$	$\frac{45,000}{30,000}$	$\frac{45,000}{25,000}$
	= 1.5	= 1.8

(ii) **Financial Leverages:**

	A (₹)	B (₹)
Situation I:		
EBIT	30,000	30,000
Less: Interest on debt	<u>(2,000)</u>	<u>(1,000)</u>
EBT	28,000	29,000
Financial Leverage $\left(\frac{EBIT}{EBT} \right)$	$\frac{30,000}{28,000}$	$\frac{30,000}{29,000}$
	= 1.07	= 1.03
Situation-II:		
EBIT	25,000	25,000
Less: Interest on debt	<u>(2,000)</u>	<u>(1,000)</u>
EBT	23,000	24,000
Financial Leverage $\left(\frac{EBIT}{EBT} \right)$	$\frac{25,000}{23,000}$	$\frac{25,000}{24,000}$
	= 1.09	= 1.04

(iii) Combined Leverages:

	A (₹)	B (₹)
(a) Situation I	$1.5 \times 1.07 = 1.61$	$1.5 \times 1.03 = 1.55$
(b) Situation II	$1.8 \times 1.09 = 1.96$	$1.8 \times 1.04 = 1.87$

5. Working notes

1 Computation of Net Present Values of Projects

Year	Cash flows		Disc. factor @ 16 %	Discounted Cash flow	
	Project A (₹)	Project B (₹)		Project A (₹)	Project B (₹)
	(1)	(2)	(3)	(3) × (1)	(3) × (2)
0	(1,35,000)	(2,40,000)	1.000	(1,35,000)	(2,40,000)
1	--	60,000	0.862	--	51,720
2	30,000	84,000	0.743	22,290	62,412
3	1,32,000	96,000	0.641	84,612	61,536
4	84,000	1,02,000	0.552	46,368	56,304
5	84,000	90,000	0.476	39,984	42,840
Net present value				58,254	34,812

2 Computation of Cumulative Present Values of Projects Cash inflows

Year	Project A		Project B	
	PV of cash inflows (₹)	Cumulative PV (₹)	PV of cash inflows (₹)	Cumulative PV (₹)
1	--	--	51,720	51,720
2	22,290	22,290	62,412	1,14,132
3	84,612	1,06,902	61,536	1,75,668
4	46,368	1,53,270	56,304	2,31,972
5	39,984	1,93,254	42,840	2,74,812

(i) Discounted payback period: (Refer to Working note 2)

Cost of Project A = ₹ 1,35,000

Cost of Project B = ₹ 2,40,000

Cumulative PV of cash inflows of Project A after 4 years = ₹ 1,53,270

Cumulative PV of cash inflows of Project B after 5 years = ₹ 2,74,812

A comparison of projects cost with their cumulative PV clearly shows that the

project A's cost will be recovered in less than 4 years and that of project B in less than 5 years. The exact duration of discounted payback period can be computed as follows:

	Project A	Project B
Excess PV of cash inflows over the project cost (₹)	18,270 (₹ 1,53,270 – ₹ 1,35,000)	34,812 (₹ 2,74,812 – ₹ 2,40,000)
Computation of period required to recover excess amount of cumulative PV over project cost (Refer to Working note 2)	0.39 year (₹ 18,270 ÷ ₹ 46,368)	0.81 years (₹ 34,812 ÷ ₹ 42,840)
Discounted payback period	3.61 year (4 – 0.39) years	4.19 years (5 – 0.81) years

(ii) **Profitability Index(PI):**
$$= \frac{\text{Sum of discounted cash inflows}}{\text{Initian cash outlay}}$$

Profitability Index (for Project A) = $\frac{₹ 1,93,254}{₹ 1,35,000} = 1.43$

Profitability Index (for Project B) = $\frac{₹ 2,74,812}{₹ 2,40,000} = 1.15$

(iii) **Net present value(NPV)** (for Project A) = ₹ 58,254

Net present value(NPV) (for Project B) = ₹ 34,812

(Refer to Working note 1)

Conclusion: As the NPV, PI of Project A is higher and Discounted Pay back is lower, therefore Project a should be accepted.

6. Annual Benefit of accepting the Discount

$$\frac{₹1.5}{₹100-₹1.50} \times \frac{365 \text{ days}}{40-10 \text{ days}} = 18.53\%$$

Annual Cost = Opportunity Cost of foregoing interest on investment = 15%

If average invoice amount is ₹ 10,00,000

	If discount is	
	Accepted (₹)	Not Accepted (₹)
Payment to Supplier (₹)	9,85,000	10,00,000
Return on investment of ₹9,85,000 for 30 days {₹ 9,85,000 × (30/365) × 15%}		(12,144)
	9,85,000	9,87,856

Thus, from above table it can be seen that it is cheaper to accept the discount.

7. Working Notes:

1. Raw Material Storage Period (R)

$$\begin{aligned}
 &= \frac{\text{Average Stock of Raw Material}}{\text{Annual Consumption of Raw Material}} \times 365 \\
 &= \frac{\text{₹ 45,000} + \text{₹ 65,356}}{2} \times 365 \\
 &= \frac{\text{₹ 3,79,644}}{\text{₹ 3,79,644}} \times 365 \\
 &= 53 \text{ days.}
 \end{aligned}$$

$$\begin{aligned}
 \text{Annual Consumption of Raw Material} &= \text{Opening Stock} + \text{Purchases} - \text{Closing Stock} \\
 &= \text{₹ 45,000} + \text{₹ 4,00,000} - \text{₹ 65,356} \\
 &= \text{₹ 3,79,644}
 \end{aligned}$$

2. Work-in-Progress (WIP) Conversion Period (W)

$$\begin{aligned}
 \text{WIP Conversion Period} &= \frac{\text{Average Stock of WIP}}{\text{Annual Cost of Production}} \times 365 \\
 &= \frac{\text{₹ 35,000} + \text{₹ 51,300}}{2} \times 365 \\
 &= \frac{\text{₹ 7,50,000}}{\text{₹ 7,50,000}} \times 365 \\
 &= 21 \text{ days}
 \end{aligned}$$

3. Finished Stock Storage Period (F)

$$= \frac{\text{Average Stock of Finished Goods}}{\text{Cost of Goods Sold}} \times 365$$

$$= \frac{\text{₹ } 65,178}{\text{₹ } 9,15,000} \times 365 = 26 \text{ days.}$$

$$\begin{aligned} \text{Average Stock} &= \frac{\text{₹ } 60,181 + \text{₹ } 70,175}{2} \\ &= \text{₹ } 65,178. \end{aligned}$$

4. **Debtors Collection Period (D)**

$$= \frac{\text{Average Debtors}}{\text{Annual Credit Sales}} \times 365$$

$$= \frac{\text{₹ } 1,23,561.50}{\text{₹ } 11,00,000} \times 365$$

$$= 41 \text{ days}$$

$$\text{Average debtors} = \frac{\text{₹ } 1,12,123 + \text{₹ } 1,35,000}{2} = \text{₹ } 1,23,561.50$$

5. **Creditors Payment Period (C)**

$$= \frac{\text{Average Creditors}}{\text{Annual Net Credit Purchases}} \times 365$$

$$= \frac{\left(\frac{\text{₹ } 50,079 + \text{₹ } 70,469}{2} \right)}{\text{₹ } 4,00,000} \times 365$$

$$= 55 \text{ days}$$

(i) **Operating Cycle Period**

$$= R + W + F + D - C$$

$$= 53 + 21 + 26 + 41 - 55$$

$$= 86 \text{ days}$$

(ii) **Number of Operating Cycles in the Year**

$$= \frac{365}{\text{Operating Cycle Period}} = \frac{365}{86} = 4.244$$

(iii) Amount of Working Capital Required

$$= \frac{\text{Annual Operating Cost}}{\text{Number of Operating Cycles}} = \frac{\text{₹ } 9,50,000}{4.244} = \text{₹ } 2,23,845.42$$

8. CALCULATION OF NET PRESENT VALUE

	(₹)
PV of Annual cash inflows (₹ 45,000 × 3.169)	1,42,605
Initial Project Cost	1,20,000
NPV (PV of Cash flow – Initial Cost)	22,605
If initial project cost is varied adversely by 10%*	
Initial Project Cost (1,20,000 × 110%)	₹ 1,32,000
NPV (Revised) (₹ 1,42,605 - ₹ 1,32,000)	₹ 10,605
Change in NPV (₹ 22,605 – ₹ 10,605) / ₹ 22,605 i.e	53.08%
If annual cash inflow is varied adversely by 10%*	
Revised annual inflow (₹45,000 × 90%)	₹ 40,500
NPV (Revised) (₹ 40,500 × 3.169) – (₹ 1,20,000)	(+) ₹ 8,345
Change in NPV (₹ 22,605 – ₹ 8,345) / ₹ 22,605	63.08%
If cost of capital is varied adversely by 10%*	
NPV (Revised) (₹ 45,000 × 3.103) – ₹ 1,20,000	(+) ₹ 19,635
Change in NPV (₹ 22,605 – ₹ 19,635) / ₹ 22,605	13.14 %

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

(*It is assumed that adverse variation is 10%)

9. Navya Ltd.

(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 = ₹20,00,000 ÷ 4,00,000 = ₹ 5

D = Dividend per share = 60% of 5 = ₹ 3

r = Return earned on investment = 15%

K_e = Cost of equity capital = 12%

$$\therefore P = \frac{3 + (5-3) \times \frac{0.15}{0.12}}{0.12} = \frac{3 + 2 \times \frac{0.15}{0.12}}{0.12} = ₹ 45.83$$

- (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:-

$$\frac{0 + (5-0) \times \frac{0.15}{0.12}}{0.12} = ₹ 52.08$$

10. (i) Borrowing option:

Annual Instalment = ₹5,00,000/ 5 = ₹1,00,000/-

Annual depreciation = ₹5,00,000/ 5 = ₹1,00,000/-

Computation of net cash outflow:

Year	Principal (₹)	Interest @10% (₹)	Total (₹)	Tax Saving on Depreciation. & Interest (₹)	Net cash Outflow (₹)	PV @ 8%	Total PV (₹)
1	1,00,000	50,000	1,50,000	45,000 (30% of 1,50,000)	1,05,000	0.926	97,230
2	1,00,000	40,000	1,40,000	42,000 (30% of 1,40,000)	98,000	0.857	83,986
3	1,00,000	30,000	1,30,000	39,000 (30% of 1,30,000)	91,000	0.794	72,254
4	1,00,000	20,000	1,20,000	36,000 (30% of 1,20,000)	84,000	0.735	61,740
5	1,00,000	10,000	1,10,000	33,000 (30% of 1,10,000)	77,000	0.681	52,437
							3,67,647
Less: Present value of Inflows at the end of 5 th year (₹ 50,000 × 0.7) or ₹ 35,000 × 0.681 =							23,835
PV of Net Cash outflows							3,43,812

Calculation of lease rentals:

Therefore, Required Annual after tax outflow = ₹ 3,43,812/3.993 = ₹ 86,104/-*

Therefore, Annual lease rental = ₹ 86,104/0.70 = ₹ 1,23,006/-

In Case If it is assumed that installment is payable in the beginning of the year then lease rent shall be computed as follows:

Required Annual after tax outflow = $3,43,812/4.31 = ₹79,734/-$

Therefore, Annual lease rental = $79,734/0.70 = ₹1,13,906/-$

- 11 (i) “The profit maximisation is not an operationally feasible criterion.” This statement is true because Profit maximisation can be a short-term objective for any organisation and cannot be its sole objective. Profit maximization fails to serve as an operational criterion for maximizing the owner's economic welfare. It fails to provide an operationally feasible measure for ranking alternative courses of action in terms of their economic efficiency. It suffers from the following limitations:
- (a) **Vague term:** The definition of the term profit is ambiguous. Does it mean short term or long term profit? Does it refer to profit before or after tax? Total profit or profit per share?
 - (b) **Timing of Return:** The profit maximization objective does not make distinction between returns received in different time periods. It gives no consideration to the time value of money, and values benefits received today and benefits received after a period as the same.
 - (c) It ignores the risk factor.
 - (d) The term maximization is also vague
- (ii) (a) **Bridge Finance:** Bridge finance refers, normally, to loans taken by the business, usually from commercial banks for a short period, pending disbursement of term loans by financial institutions. Normally it takes time for the financial institution to finalise procedures of creation of security, tie-up participation with other institutions etc. even though a positive appraisal of the project has been made. However, once the loans are approved in principle, firms in order not to lose further time in starting their projects arrange for bridge finance. Such temporary loan is normally repaid out of the proceeds of the principal term loans. It is secured by hypothecation of moveable assets, personal guarantees and demand promissory notes. Generally rate of interest on bridge finance is higher as compared with that on term loans.
- (b) **Floating Rate Bonds:** These are the bonds where the interest rate is not fixed and is allowed to float depending upon the market conditions. These are ideal instruments which can be resorted to by the issuers to hedge themselves against the volatility in the interest rates. They have become more popular as a money market instrument and have been successfully issued by financial institutions like IDBI, ICICI etc.
 - (c) **Packing Credit:** Packing credit is an advance made available by banks to an exporter. Any exporter, having at hand a firm export order placed with him by

his foreign buyer on an irrevocable letter of credit opened in his favour, can approach a bank for availing of packing credit. An advance so taken by an exporter is required to be liquidated within 180 days from the date of its commencement by negotiation of export bills or receipt of export proceeds in an approved manner. Thus Packing Credit is essentially a short-term advance.

- (iii) On one hand when cost of 'fixed cost fund' is less than the return on investment financial leverage will help to increase return on equity and EPS. The firm will also benefit from the saving of tax on interest on debts etc. However, when cost of debt will be more than the return it will affect return of equity and EPS unfavourably and as a result firm can be under financial distress. This is why financial leverage is known as "double edged sword".

Effect on EPS and ROE:

When, $ROI > \text{Interest}$ – Favourable – Advantage

When, $ROI < \text{Interest}$ – Unfavourable – Disadvantage

When, $ROI = \text{Interest}$ – Neutral – Neither advantage nor disadvantage.

SECTION: B: ECONOMICS FOR FINANCE

QUESTIONS

1. (a) Define National Income. Draw the basis of distinction between GDP at current and constant prices.
- (b) You are given the following data on an economy in millions:

Consumer Expenditure (inclusive of indirect taxes)	110 m
Investment	20 m
Government Expenditure (inclusive of transfer payments)	70 m
Exports	20 m
Imports	50 m
Net Property Income from abroad	10 m
Transfer payments	20 m
Indirect taxes	30 m
Population	0.5 m

- (i) Calculate the Gross Domestic Product at market prices.
- (ii) Calculate the Gross National Income at market prices.
- (iii) Calculate the Gross Domestic Product at factor cost.
- (iv) Calculate the per capita Gross National Income at factor cost.
2. (a) Define consumption function? Examine what would happen if aggregate expenditures were to exceed the economy's production capacity?
- (b) For an Economy with the following specifications
- Consumption, $C = 50 + 0.75 Y_d$
- Investment, $I = 100$
- Government Expenditure, $G = 200$
- Transfer Payments, $R = 110$
- Income Tax = $0.2Y$
- (i) Find out the equilibrium of income and the value of expenditure multiplier.
- (ii) If autonomous taxes worth ₹ 25 Crores are added. Find out equilibrium level of Income.
- (iii) If the economy is opened up with exports $X = 25$ and imports $M = 5 + 0.25Y$ Calculate the new level of Income and balance of Trade (Assume that there are no autonomous Taxes.)

3. (a) Define the concept of market failure. Describe the different sources of market failure.
(b) Identify the market outcomes for each of the following situations
 - i. A few youngsters play loud music at night. Neighbours may not be able to sleep.
 - ii. Ram buys a large SUV which is very heavy.
 - iii. X smokes in a public place.
 - iv. Rural school students are given vaccination against measles.
 - v. Traffic congestion making travel very uncomfortable.
4. Examine what types of fiscal policy measures are useful for redistribution of income in an economy?
- 5 (a) Analyse what should be the tax policy during recession and depression?
(b) Explain the term quasi-public goods.
- 6 (a) Explain how speculative motive for holding cash is related to market interest rate.
(b) Describe the treatment of transactions demand for money as per Baumol and Tobin's model.
7. (a) Describe the different determinants of money supply in a country.
(b) What role does Market Stabilization Scheme (MSS) play in our economy?
(c) Examine what would be the effect on money multiplier if banks hold excess reserves?
(d) Write a note on Cash Reserve Ratio (CRR). Explain the operation of CRR.
8. Define foreign direct investment (FDI). Mention two arguments made in favour of FDI to developing economies like India?
9. Explain the nature of changes in exchange rates and their impact on real economy?
10. (a) What are the major functions of the WTO? What do you understand by the term 'Most-favored-nation' (MFN)?
(b) Define 'dumping'? What is meant by an 'Anti-dumping' measure?

SUGGESTED ANSWERS /HINTS

1. (a) National Income is defined as the net value of all economic goods and services produced within the domestic territory of a country in an accounting year plus the net factor income from abroad. According to the Central Statistical Organization (CSO) 'National income is the sum total of factor incomes generated by the normal residents of a country in the form of wages, rent, interest and profit in an accounting year'.
National income may be measured at current prices or at constant prices. If goods and services produced in a year are valued at current prices, i.e., market prices

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

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

- (b) (i) $GDP_{MP} = C + I + G + (X - Z)$
 $110 + 20 + (70 - 20) + (20 - 50) = 150$ million
- (ii) $GNP_{MP} = \text{GDP at market prices} + \text{net property income from abroad}$
 $150 + 10 = 160$ million
- (iii) $GDP_{\text{at factor cost}} = \text{GDP market prices} - \text{indirect taxes}$
 $150 - 30 = 120$ million
- (iv) Per Capita Income = $\frac{GNP \text{ at Factor Cost}}{\text{Population}} = \frac{(160m - 30m)}{0.5 \text{ million}}$
 $= 130 / 0.5 = 260$

2. (a) Consumption function is the functional relationship between aggregate consumption expenditure and aggregate disposable income, expressed as $C = f(Y)$; shows the level of consumption (C) corresponding to each level of disposable income (Y)

Aggregate expenditures in excess of output lead to a higher price level once the economy reaches full employment. Nominal output will increase, but it merely reflects higher prices, rather than additional real output.

- (b) (i) Level of Disposable income Y_d is given by
 $Y_d = Y - \text{Tax} + \text{Transfer Payments}$, Where, Transfer Payment = 110

$$= Y - 0.2 Y + 110 = 0.8Y + 110,$$

$$\text{and } C = 50 + 0.75 Y_d$$

$$= 50 + 0.75(0.8Y + 110) \text{ (where } Y_d = 0.8Y + 110)$$

$$= 50 + (0.75 \times 0.8Y) + (0.75 \times 110) = 132.50 + 0.6Y$$

$$C = 132.50 + 0.6 Y$$

$$\text{Now } Y = C + I + G, \text{ Where } C = 132.50 + 0.6Y, I = 100, G = 200 \text{ (Given)}$$

$$Y = (132.50 + 0.6Y) + 100 + 200$$

$$= 432.50 + 0.6Y$$

$$Y - 0.6Y = 0.4Y = 432.50$$

$$\text{or } Y = 432.50 / 0.4 = ₹ 1,081.25 \text{ Crores}$$

$$\text{Expenditure Multiplier} = \frac{1}{1-b} = \frac{1}{1-0.6} = 2.5 \text{ (Multiplier in closed economy} = \frac{1}{1-b} \text{)}$$

$$\text{(Here } b = \text{MPC} = \frac{\Delta C}{\Delta Y} \text{)}$$

- (ii) If autonomous taxes worth of ₹ 25 Crores added, this will reduce disposable income by ₹ 25 crores

Level of Disposable income Y_d is given by

$$Y_d = Y - \text{Tax} + \text{Transfer payments}$$

$$\text{Thus } Y_d = Y - 0.2Y + (110 - 25) = 0.8Y + 85 \text{ (Income Tax Given} = 0.2Y, \text{ Transfer Payments} = 110)$$

$$C = 50 + 0.75(0.8Y + 85) \text{ (Given } C = 50 + 0.75 Y_d)$$

$$C = 50 + (0.75 \times 0.8Y) + (0.75 \times 85)$$

$$= 50 + 0.6Y + 63.75 = 113.75 + 0.6Y$$

$$Y = C + I + G$$

$$= (113.75 + 0.6Y) + 100 + 200 = 413.75 + 0.6Y \text{ (} C = 113.75 + 0.6Y, I = 100, G = 200)$$

$$Y - 0.6Y = 413.75$$

$$0.4Y = 413.75$$

$$Y = \frac{413.75}{0.4} = ₹ 1034.375 \text{ Crores.}$$

- (iii) $Y = C + I + G + (X - M)$, Where Consumption, $(C) = 132.50 + 0.6 Y$, Investment $(I) = 100$, Government Expenditure $(G) = 200$

$$\text{Since } X = 25, M = 5 + 0.25 Y$$

$$Y = (132.50 + 0.6Y) + 100 + 200 + \{25 - (5 + 0.25Y)\} \text{ (Given } X = 25 \text{ crores and } M$$

$$= 5+0.25Y)$$

$$Y = (132.50+0.6Y) +100+200+ (25-5-0.25Y)$$

$$= (1-0.6+0.25) Y = 452.50$$

$$Y = \frac{452.50}{0.65} = ₹ 696.15 \text{ Crores}$$

$$\text{Imports} = 5+0.25Y = 5+ (0.25 \times 696.15) = ₹ 179.04 \text{ Crores}$$

$$\text{Balance of trade} = \text{Exports} - \text{Imports}$$

$$\text{Balance of Trade} = 25 - M = 25 - 179.04 = -₹ 154.04 \text{ crores.}$$

Thus, there is adverse balance in Trade of ₹ 154.04 crores

3. (a) Market failure is a situation in which the free market fails to allocate resources efficiently in the sense that there is either overproduction or underproduction of particular goods and services leading to less than optimal market outcomes. The reason for market failure lies in the fact that though perfectly competitive markets work efficiently, most often the prerequisites of competition are unlikely to be present in an economy. There are two aspects of market failures namely, demand-side market failures and supply side market failures. Demand-side market failures are said to occur when the demand curves do not take into account the full willingness of consumers to pay for a product. Supply-side market failures happen when supply curves do not incorporate the full cost of producing the product.

There are four major reasons for market failure. They are: market power, externalities, public goods, and incomplete information.

- (1) Excess market power or monopoly power causes the single producer or small number of producers to produce and sell less output than would be produced in a competitive market and to charge higher prices that give them positive economic profits.
- (2) Externalities, also referred to as 'spillover effects', 'neighbourhood effects' 'third-party effects' or 'side-effects', occur when the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price. Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to buy.
- (3) Public goods (also referred to as a collective consumption good or a social good) are indivisible goods which all individuals enjoy in common and are non excludable and non rival in consumption. Each individual's consumption of such a good leads to no subtraction from any other individual's consumption and consumers cannot (at least at less than prohibitive cost) be excluded from consumption benefits of that good. Public goods do not conform to the settings

of market exchange and left to the market, they will not be produced at all or will be under produced.

- (4) Incomplete information: The assumption of complete information which is a feature of competitive markets is not fully satisfied in real markets due to highly complex nature of products and services, inability of consumers to quickly / cheaply find sufficient information, inaccurate or incomplete data, ignorance, lack of alertness and uncertainty about true costs and benefits. Misallocation of scarce resources occurs due to information failure and equilibrium price and quantity is not established through price mechanism. Asymmetric information also referred to as the 'lemons problem' which occurs when there is an imbalance in information between buyer and seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer also distort choices and cause market failure. Adverse selection, another source of market failure, is a situation in which asymmetric information about quality eliminates high-quality goods from a market. Moral hazard i.e. opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action arises from lack of information about someone's future behavior also causes market failure. In short, asymmetric information, adverse selection and moral hazard affect the ability of markets to efficiently allocate resources and therefore lead to market failure because the party with better information has a competitive advantage.

- (b) The market outcomes of different situations are given below;
- (i) Negative consumption externality; social cost not accounted for; market failure; overproduction
 - (ii) Negative consumption externality; environmental externality; wear and tear of roads; increased fuel consumption; added insecurity imposed on others; social cost not accounted for; overproduction.
 - (iii) Negative consumption externality; overproduction.
 - (iv) Public good, merit good; positive consumption externality; under production; scope for government intervention.
 - (v) Negative externality; social cost not accounted for; overproduction.
4. Many developed and developing economies are facing the challenge of rising inequality in incomes and opportunities. Redistribution of income to ensure distributive justice is essentially a fiscal function. Fiscal policy is a chief instrument available for governments to influence income distribution and plays a significant role in reducing inequality and achieving equity and social justice. The distribution of income in the society is influenced by fiscal policy both directly and indirectly. While current disposable incomes of individuals and corporates are dependent on direct taxes, the potential for future earnings is indirectly influenced by the nation's fiscal policy choices.

Government revenues and expenditure have traditionally been regarded as important instruments for carrying out desired redistribution of income. Each of these can be manipulated to achieve desired distributional effects.

- A progressive direct tax system appropriately designed to protect incentives ensures that those who have greater ability to pay contribute more towards defraying the expenses of government and that the tax burden is distributed fairly among the population.
- Indirect taxes can be differential: for example, the commodities which are primarily consumed by the richer income group, such as luxuries, are taxed heavily and the commodities the expenditure on which form a larger proportion of the income of the lower income group, such as necessities, are taxed light. Property taxes act both as a source of revenue and as an efficient redistributive instrument.
- A carefully planned policy of public expenditure helps in redistributing income from the rich to the poorer sections of the society. This is done through spending programmes targeted on welfare measures for the disadvantaged, such as :
 - (i) poverty alleviation programmes
 - (ii) free or subsidized medical care, education, housing, essential commodities etc. to improve the quality of living of poor
 - (iii) infrastructure provision on a selective basis
 - (iv) various social security schemes and more efficient social transfers under which people are entitled to noncontributory, means-tested social pensions, conditional cash transfer programs, unemployment relief, sickness allowance etc.
 - (v) subsidized production of products of mass consumption
 - (vi) public production and/ or grant of subsidies to ensure sufficient supply of essential goods, and
 - (vii) strengthening of human capital for enhancing employability etc.

The design of redistribution policies should justify both redistributive and efficiency objectives. Choice of a progressive tax system with high marginal taxes may act as a strong deterrent to work, save and invest. Therefore, the tax structure has to be carefully framed to mitigate possible adverse impacts on production and efficiency. Additionally, the redistributive fiscal policy and the extent of spending on redistribution should be consistent with the macroeconomic policy objectives, especially macroeconomic stability of the nation.

5. (a) A recession is said to occur when overall economic activity declines, or in other words, when the economy 'contracts'. A recession sets in with a period of declining real income, as measured by real GDP, simultaneously with a situation of rising

unemployment. If an economy experiences a fall in aggregate demand during a recession, it is said to be in a demand-deficient recession. Economic depression is a condition of the economy resulting from an extended period of negative economic activity as measured by GDP. It is an extremely severe form of recession that leads to extended unemployment, increased credit defaults, extensive decline in output and income and a deflationary economy.

Taxation, though less effective compared to public expenditure, is a powerful instrument of fiscal policy in the hands of governments to combat recession and depression. Reduction in corporate and personal income taxation is a useful measure to overcome contractionary tendencies in the economy. A tax cut increases disposable incomes of households. Their inclination to spend a portion of the additional disposable income determined by their marginal propensity to consume and the multiplier effect of spending would set out a chain reaction of spending, increased incomes, and consequent increased output. Reduction in the rates of commodity taxes like excise duties, sales tax and import duty promote consumption and ultimately boost investments. Moreover, tax measures can provide incentives, or reduce disincentives, for firms and households to engage in investment and consumer spending.

- (b) Quasi-public goods or services, also called a near public good (for e.g. education, health services) possess nearly all the qualities of private goods and some of the benefits of public good. These goods are, in some measure excludable for example, it is possible to exclude non paying consumers from the use of a highway by incurring the cost of building and maintaining a toll booth. Similarly beaches, parks and wifi networks become partially rival and partially diminishable at times of peak demand. These are rejectable to some extent. It is possible to keep people away from them by charging a price or fee. However, it is undesirable to keep people away from such goods because the society would be better off if more people consume them. This particular characteristic namely, the combination of virtually infinite benefits and the ability to charge a price results in some quasi-public goods being sold through markets and others being provided by government. As such, people argue that these should not be left to the market alone. Markets for the quasi-public goods are considered to be incomplete markets and their lack of provision by free markets would be considered as inefficiency and market failure.
6. (a) According to Keynes' theory of liquidity preference, speculative motive for holding cash is related to market interest. The market value of bonds and the market rate of interest are inversely related. A rise in the market rate of interest leads to a decrease in the market value of the bond, and vice versa. Investors have a relatively fixed conception of the 'normal' or 'critical' interest rate and compare the current rate of interest with such 'normal' or 'critical' rate of interest.

If wealth-holders consider that the current rate of interest is high compared to the 'normal or critical rate of interest', they expect a fall in the interest rate (rise in bond

prices). At the high current rate of interest, they will convert their cash balances into bonds because:

- (i) they can earn high rate of return on bonds
- (ii) they expect capital gains resulting from a rise in bond prices consequent upon an expected fall in the market rate of interest in future.

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

- (i) the loss suffered by way of interest income forgone is small,
- (ii) they can avoid the capital losses that would result from the anticipated increase in interest rates, and
- (iii) the return on money balances will be greater than the return on alternative assets
- (iv) If the interest rate does increase in future, the bond prices will fall and the idle cash balances held can be used to buy bonds at lower price and can thereby make a capital-gain.

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

- (b) Baumol (1952) and Tobin (1956) developed a deterministic theory of transaction demand for money, known as Inventory Theoretic Approach, in which money was essentially viewed as an inventory held for transaction purposes.

Inventory models assume that there are two media for storing value: money and an interest-bearing alternative asset. Baumol's propositions in his theory of transaction demand for money hold that receipt of income, say Y takes place once per unit of time but expenditure is spread at a constant rate over the entire period of time. There is an opportunity cost of holding money: the interest forgone on an interest-bearing asset such as a bond. In order to maximize interest earnings, a person would like to hold as much of his wealth as possible in the form of bonds, while still being able to finance the flow of monetary expenditures. If there is no cost to doing so, he would keep all of his wealth in the form of "bond" and hold zero money balances. However, making these transfers generally incurs some kind of cost, either explicitly through a

transaction fee or implicitly through the time and inconvenience of making the transfer.

The level of inventory holding depends upon the carrying cost, which is the interest forgone by holding money and not bonds, net of the cost to the individual of making a transfer between money and bonds, say for example brokerage fee. If an individual, say X, decided to invest in bonds. If r is the return on bond holding; c is the cost of each transaction in the bond market; (i.e. for converting it to liquid cash) and n is the number of bond transactions, then the net profit for the individual would be

$$R - (n c)$$

where R is the interest earning on the average bond holding which is equal to r times average bond holdings and nc the transaction costs which equal the cost of each transaction multiplied by the number of bond transactions.

Therefore, for a given income, the choice of the split of total money into money and bond holdings is determined by the choice of n . The individual will choose n in such a way that the net profits from bond transactions are maximized. The Baumol-Tobin model derives the optimal frequency of bond-money transactions that minimizes the sum of the two components of cost: the forgone interest cost (which rises as average money balances increase) and the transaction cost (which falls as fewer transactions are made or more money is held).

The individual will apply the marginalist principle and will increase the number of transactions in the bond market until the point at which the marginal interest earnings from one additional transaction just equals the constant marginal cost, which will be equal to the brokerage fee etc. Beyond this point, the marginal gain in interest earned from increasing the number of bond market transactions is not sufficient to cover the brokerage cost of the transaction. To sum up, the choice of n determines the split of money and bond holdings for a given income.

The optimal average money holding is:

- (i) a positive function of income Y ,
 - (ii) a positive function of the price level P ,
 - (iii) a positive function of transactions costs c , and
 - (iv) a negative function of the nominal interest rate i
7. (a) There are two alternate theories in respect of determination of money supply. According to the first view, money supply is determined exogenously by the central bank. The second view holds that the money supply is determined endogenously by changes in the economic activities which affect people's desire to hold currency relative to deposits, rate of interest, etc. The current practice is to explain the determinants of money supply based on 'money multiplier approach' which focuses

on the relation between the money stock and money supply in terms of the monetary base or high-powered money. This approach holds that total supply of nominal money in the economy is determined by the joint behaviour of the central bank, the commercial banks and the public.

The money supply is defined as

$$M = m \times MB$$

Where M is the money supply, m is money multiplier and MB is the monetary base or high powered money.

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

Money multiplier m is defined as a ratio that relates the change in the money supply to a given change in the monetary base. It denotes by how much the money supply will change for a given change in high-powered money. The multiplier indicates what multiple of the monetary base is transformed into money supply.

If some portion of the increase in high-powered money finds its way into currency, this portion does not undergo multiple deposit expansion. In other words, as a rule, an increase in the monetary base that goes into currency is not multiplied, whereas an increase in monetary base that goes into supporting deposits is multiplied.

- (b) Market Stabilization scheme (MSS), introduced in April 2004, is a monetary policy intervention by the RBI to withdraw excess liquidity (or money supply) by selling government securities in the economy. Under the Market Stabilisation Scheme (MSS) the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury-bills/dated securities that are utilized for absorbing from the market excess liquidity of a more enduring nature arising from large capital inflows. The bills/bonds issued under MSS would have all the attributes of the existing treasury bills and dated securities. The bills and securities will be issued by way of auctions to be conducted by the Reserve Bank. These bonds are issued by RBI on the behalf of Government in order to mop out excess liquidity from the market (Banks) and not for raising capital for government.
- (c) The money multiplier approach to money supply considers the ratio of deposit to reserve, $e = \{ER/D\}$ which represent the behaviour of commercial banks as one of the determinants of money supply. The commercial banks are required to keep only a part or fraction of their total deposits in the form of cash reserves. For the commercial banking system as a whole, the actual reserves ratio may be greater than the required reserve ratio since the banks keep with them a higher than the statutorily required percentage of their deposits in the form of cash reserves. The additional units of high-powered money that goes into 'excess reserves' of the commercial banks do not lead to any additional loans, and therefore, these excess reserves do not lead to creation

of money. Therefore, if the central bank injects money into the banking system and these are held as excess reserves by the banking system, there will be no effect on deposits or currency and hence no effect on money multiplier and therefore on money supply.

- (d) Cash Reserve Ratio (CRR) refers to the fraction of the total net demand and time liabilities (NDTL) of a scheduled commercial bank in India which it should maintain as cash deposit with the Reserve Bank. The RBI may set the ratio in keeping with the broad objective of maintaining monetary stability in the economy. The credit creation capacity of commercial banks is inversely related to the cash reserve ratio. Higher the CRR, lower will be the credit creation and vice versa.

CRR has, in recent years, assumed significance as one of the important quantitative tools aiding in liquidity management. Higher the CRR with the RBI, lower will be the liquidity in the system and vice versa. During deflation, the RBI reduces the CRR in order to enable the banks to expand credit and increase the supply of money available in the economy. In order to contain credit expansion during periods of inflation, the RBI increases the CRR.

8. Foreign direct investment is defined as a process whereby the resident of one country (i.e. home country) acquires ownership of an asset in another country (i.e. the host country) and such movement of capital involves ownership, control as well as management of the asset in the host country. Direct investments are real investments in factories, assets, land, inventories etc. and have three components, viz., equity capital, reinvested earnings and other direct capital in the form of intra-company loans. Foreign direct investment also includes all subsequent investment transactions between the investor and the enterprise and among affiliated enterprises, both incorporated and unincorporated. FDI involves long term relationship and reflects a lasting interest and control. According to the IMF and OECD definitions, the acquisition of at least ten percent of the ordinary shares or voting power in a public or private enterprise by non-resident investors makes it eligible to be categorized as FDI. FDI may be categorized as horizontal, vertical, conglomerate and two-way direct foreign investments which are reciprocal investments.

Benefits of Foreign Direct Investment

Following are the benefits ascribed to foreign investments:

- (i) Entry of foreign enterprises usually fosters competition and generates a competitive environment in the host country. The domestic enterprises are compelled to compete with the foreign enterprises operating in the domestic market. This results in positive outcomes in the form of cost-reducing and quality-improving innovations, higher efficiency and increasing variety of better products and services at lower prices ensuring wider choice and welfare for consumers.
- (ii) International capital allows countries to finance more investment than can be supported by domestic savings resulting in higher productivity and enhanced output.

From the perspective of emerging and developing countries, FDI can accelerate growth and foster economic development by providing the much needed capital, technological know-how, management skills and marketing methods and critical human capital skills in the form of managers and technicians. The spill-over effects as the new technologies usually spread beyond the foreign corporations. In addition, the new technology can clearly enhance the recipient country's production possibilities.

9. Changes in exchange rates portray depreciation or appreciation of one currency against another. The terms, 'currency appreciation' and 'currency depreciation' describe the movements of the exchange rate. Currency appreciates when its value increases with respect to the value of another currency or a basket of other currencies. On the contrary, currency depreciates when its value falls with respect to the value of another currency or a basket of other currencies. If the Rupee dollar exchange rate changes from \$1 = ₹ 65 to \$1 = ₹ 68, the value of the Indian Rupee has diminished or Indian Rupee has depreciated and the US dollar has appreciated. On the contrary, home-currency appreciation or foreign-currency depreciation takes place when there is a decrease in the home currency price of foreign currency (or alternatively, an increase in the foreign currency price of home currency). The home currency thus becomes relatively more valuable. Under a floating rate system, if for any reason, the demand curve for foreign currency shifts to the right representing increased demand for foreign currency, and supply curve remains unchanged, then the exchange value of foreign currency rises and the domestic currency depreciates in value.

Following are the impact of exchange rate changes on the real economy:

The developments in the foreign exchange markets affect the domestic economy both directly and indirectly. All else equal, an appreciation(depreciation) of a country's currency raises (decreases) the relative price of its exports and lowers (increases) the relative price of its imports leading to changes in import and export volumes and consequently on import spending and export revenue. Depreciation adversely affects importers as they have to pay more domestic currency on the same quantity of imports and benefits exporters as forex earnings will fetch more in terms of domestic currency.

For an economy where exports are significantly high, a depreciated currency would mean a lot of gain. Depreciation of domestic currency primarily decreases the relative price of domestically produced goods and diverts spending from foreign goods to domestic goods. Increased demand, both for domestic import-competing goods and for exports encourages economic activity and creates output expansion. Overall, the outcome of exchange rate depreciation is an expansionary impact on the economy at an aggregate level.

As a result of depreciation or devaluation, the terms of trade of the nation can rise, fall or remain unchanged, depending on whether price of exports rises by more than, less than or same percentages as price of imports. Depreciation also can have a positive impact on country's trade deficit as it makes imports more expensive for domestic consumers and

exports cheaper for foreigners. However, the fiscal health of a country whose currency depreciates is likely to be affected with rising import payments and consequent rising current account deficit (CAD) and diminished growth prospects of overall economy.

Depreciation is also likely to fuel consumer price inflation, directly through its effect on prices of imported consumer goods and also due to increased demand for domestic goods. The impact will be greater if the composition of domestic consumption baskets consists more of imported goods. Indirectly, cost push inflation may result through possible escalation in the cost of imported components and intermediaries used in production.

When a country's currency depreciates, production of export goods and import substitutes becomes more profitable. Therefore, factors of production will be induced to move into the tradable goods sectors and out of the non tradable goods sectors. By lowering export prices, currency depreciation helps increase the international competitiveness of domestic industries, increases the volume of exports, augments windfall profits in export oriented sectors and import-competing industries and promotes trade balance. If exports originate from labour-intensive industries, increased export prices will have spiraling effects on wages, employment and income. If inputs and components for manufacturing are mostly imported and cannot be domestically produced, increased import prices will increase firms' cost of production, push domestic prices up and decrease real output.

Foreign capital inflows are characteristically vulnerable to exchange rate fluctuations. Depreciating currency hits investor sentiments and has radical impact on patterns of international capital flows. Foreign investors are likely to be indecisive or highly cautious before investing in a country which has high exchange rate volatility. Foreign direct investment flows are likely to shrink and foreign portfolio investments are likely to flow into debt and equity. This may shoot up capital account deficits affecting the country's fiscal health. Reduced foreign investments also widen the gap between investments required for growth and actual investments. Over a period of time, unemployment is likely to mount in the economy.

If investor sentiments are such that they anticipate further depreciation, there may be large scale withdrawal of portfolio investments and huge redemptions through global exchange traded funds leading to further depreciation of domestic currency. This may result in a highly volatile domestic equity market affecting the confidence of domestic investors.

Companies that have borrowed in foreign exchange through external commercial borrowings (ECBs) but have not sufficiently hedged against foreign exchange risks would also be negatively impacted as they would require more domestic currency to repay their loans. A depreciated domestic currency would also increase their debt burden and lower their profits and impact their balance sheets adversely. Exchange rate fluctuations make financial forecasting more difficult for firms and larger amounts will have to be earmarked for insuring against exchange rate risks through hedging.

Investors who have purchased a foreign asset, or the corporation which floats a foreign debt, will find themselves facing foreign exchange risk. However, remittances to homeland by non residents and businesses abroad fetches more in terms of domestic currency.

In case of foreign currency denominated government debts, currency depreciation will increase the interest burden and cause strain to the exchequer for repaying and servicing foreign debt.

Depreciation would enhance government revenues from import related taxes, especially if the country imports more of essential goods. Depreciation would also result in higher amount of local currency for a given amount of foreign currency borrowings of government.

10. (a) The principal objective of the WTO is to facilitate the flow of international trade smoothly, freely, fairly and predictably. To achieve this, the WTO endeavors:
- (i) to set and enforce rules for international trade,
 - (ii) to provide a forum for negotiating and monitoring further trade liberalization
 - (iii) to resolve trade disputes
 - (iv) to increase the transparency of decision-making processes
 - (v) to cooperate with other major international economic institutions involved in global economic management, and
 - (vi) to help developing countries benefit fully from the global trading system.

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

- (b) Dumping occurs when manufacturers sell goods in a foreign country below the sales prices in their domestic market or below their full average cost of the product. Dumping may be persistent, seasonal, or cyclical. Dumping may also be resorted to as a predatory pricing practice to drive out established domestic producers from the market and to establish monopoly position. Dumping is international price discrimination favouring buyers of exports, but in fact, the exporters deliberately forego money in order to harm the domestic producers of the importing country and

to gain market share. This is an unfair trade practice and constitutes a threat to domestic producers.

Anti-dumping measures consist of imposition of additional import duties to offset the effects of dumping. These measures are initiated as safeguards to offset the foreign firm's unfair price advantage. This is justified only if the domestic industry is seriously injured by import competition, and protection is in the national interest (that is, the associated costs to consumers would be less than the benefits that would accrue to producers).