

MOCK TEST PAPER – 2
INTERMEDIATE (NEW): GROUP – II
PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

Time Allowed – 3 Hours

Maximum Marks – 100

PAPER 8A : FINANCIAL MANAGEMENT (60 Marks)

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

Question No. 1 is compulsory.

*Attempt any **four** questions from the remaining **five** questions.*

Working notes should form part of the answer.

1. Answer the following:

(a) PQR Ltd. has the following capital structure on October 31, 20X8:

Sources of capital	(Rs.)
Equity share capital (2,00,000 shares of Rs.10 each)	20,00,000
Reserves & surplus	20,00,000
12% Preference share capital	10,00,000
9% Debentures	30,00,000
	80,00,000

The market price of equity share is Rs. 30. It is expected that the company will pay next year a dividend of Rs. 3 per share, which will grow at 7% forever. Assume 40% income tax rate.

You are required to COMPUTE weighted average cost of capital using market value weights.

(b) NSG Ltd. has a sale of Rs.75,00,000, variable cost of Rs.42,00,000 and fixed cost of Rs.6,00,000. The Present capital structure of NSG is as follows:

Equity Shares	Rs. 55,00,000
Debt (12%)	Rs. 45,00,000
Total	Rs. 1,00,00,000

- (i) DETERMINE the ROCE of NSG Ltd.
- (ii) Does NSG have a favourable financial leverage? ANALYSE.
- (iii) If the industry average of asset turnover is 3, does it have a high or low asset leverage? DETERMINE
- (iv) COMPUTE the leverages of NSG?
- (v) DETERMINE, at what level of sales, will the EBT be zero?

(c) Following information relate to a concern:

Debtors Velocity	3 months
Credits Velocity	2 months
Stock Turnover Ratio	1.5
Gross Profit Ratio	25%

Bills Receivables	Rs. 25,000
Bills Payables	Rs. 10,000
Gross Profit	Rs. 4,00,000
Fixed Assets to turnover Ratio	4

Closing stock of the period is Rs. 10,000 above the opening stock.

CALCULATE

- (i) Sales and cost of goods sold
 - (ii) Sundry Debtors
 - (iii) Sundry Creditors
 - (iv) Closing Stock
 - (v) Fixed Assets
- (d) RST Ltd. has a capital of Rs. 10,00,000 in equity shares of Rs. 100 each. The shares are currently quoted at par. The company proposes to declare a dividend of Rs. 10 per share at the end of the current financial year. The capitalization rate for the risk class of which the company belongs is 12%. COMPUTE the market price of the share at the end of the year, if
- (i) a dividend is not declared?
 - (ii) a dividend is declared?
 - (iii) assuming that the company pays the dividend and has net profits of Rs.5,00,000 and makes new investments of Rs.10,00,000 during the period, how many new shares must be issued? Use the MM model. **(4 × 5 Marks = 20 Marks)**

2. JKL Ltd. has the following book-value capital structure as on March 31, 20X8.

	(Rs.)
Equity share capital (2,00,000 shares)	40,00,000
11.5% Preference shares	10,00,000
10% Debentures	30,00,000
	80,00,000

The equity shares of the company are sold at Rs. 20. It is expected that the company will pay next year a dividend of Rs. 2 per equity share, which is expected to grow by 5% p.a. forever. Assume a 35% corporate tax rate.

Required:

- (i) COMPUTE weighted average cost of capital (WACC) of the company based on the existing capital structure.
 - (ii) COMPUTE the new WACC, if the company raises an additional Rs. 20 lakhs debt by issuing 12% debentures. This would result in increasing the expected equity dividend to Rs. 2.40 and leave the growth rate unchanged, but the price of equity share will fall to Rs.16 per share. **(10 Marks)**
3. RST Limited is considering relaxing its present credit policy and is in the process of evaluating two proposed policies. Currently, the firm has annual credit sales of Rs 225 lakhs and accounts receivable turnover ratio of 5 times a year. The current level of loss due to bad debts is Rs.7,50,000. The firm is required to give a return of 20% on the investment in new accounts receivables. The company's variable costs are 60% of the selling price. Given the following information, DETERMINE which is a better option?

(Amount in lakhs)

	Present Policy	Policy Option I	Policy Option II
Annual credit sales (Rs)	225	275	350
Accounts receivable turnover ratio	5	4	3
Bad debt losses (Rs)	7.5	22.5	47.5

(10 Marks)

4. The management of Z Company Ltd. wants to raise its funds from market to meet out the financial demands of its long-term projects. The company has various combinations of proposals to raise its funds. You are given the following proposals of the company:

Proposal	Equity shares (%)	Debts (%)	Preference shares (%)
P	100	-	-
Q	50	50	-
R	50	-	50

- (i) Cost of debt and preference shares is 10% each.
(ii) Tax rate – 50%
(iii) Equity shares of the face value of Rs. 10 each will be issued at a premium of Rs. 10 per share.
(iv) Total investment to be raised Rs. 40,00,000.
(iv) Expected earnings before interest and tax Rs. 18,00,000.

From the above proposals the management wants to take advice from you for appropriate plan after computing the following:

- Earnings per share
- Financial break-even-point

COMPUTE the EBIT range among the plans for indifference. Also indicate if any of the plans dominate.

(10 Marks)

5. X Limited is considering to purchase of new plant worth Rs. 80,00,000. The expected net cash flows after taxes and before depreciation are as follows:

Year	Net Cash Flows (Rs.)
1	14,00,000
2	14,00,000
3	14,00,000
4	14,00,000
5	14,00,000
6	16,00,000
7	20,00,000
8	30,00,000
9	20,00,000
10	8,00,000

The rate of cost of capital is 10%.

You are required to CALCULATE

- (i) Pay-back period
- (ii) Net present value at 10 discount factor
- (iii) Profitability index at 10 discount factor
- (iv) Internal rate of return with the help of 10% and 15% discount factor

The following present value table is given for you:

Year	Present value of Rs. 1 at 10% discount rate	Present value of Rs. 1 at 15% discount rate
1	.909	.870
2	.826	.756
3	.751	.658
4	.683	.572
5	.621	.497
6	.564	.432
7	.513	.376
8	.467	.327
9	.424	.284
10	.386	.247

(10 Marks)

6. (a) DISCUSS the three major decisions taken by a finance manager to maximize the wealth of shareholders.
- (b) STATE the disadvantages of the Certainty equivalent Method. EXPLAIN its differences with Risk Adjusted discount rate.
- (c) STATE the advantages of Stock-Splits.

(4 + 4 + 2 =10 Marks)

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

SECTION B: ECONOMICS FOR FINANCE

Question No.7 is compulsory. Answer any **three** from rest.

Marks: 40

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 respective questions.

- 7 (a) An increase of investment by Rs. 600 Crores resulted in an increase in national income by 2400 Crores. Find MPC and MPS? **(2 Marks)**
- (b) Explain the effects of monetary policy through the exchange rate channel? **(3 Marks)**
- (c) Define information failure **(3 Marks)**
- (d) What's meant by devaluation? **(2 Marks)**
8. (a) (i) Define CRR. How is CRR used as a policy instrument. **(3 Marks)**
- (ii) What should the market price reflect for achieving economic efficiency? **(3 Marks)**
- (b) (i) Explain the leakages and injections in the circular flow of income **(2 Marks)**
- (ii) Define 'moral hazard' **(2 Marks)**
9. (a) (i) Explain the function of money as a unit of account? **(3 Marks)**
- (ii) What is the rationale for government intervention in allocation of resources? **(2 Marks)**
- (b) Suppose an economy:

$$\text{Consumption Function (C)} = 200 + 0.6 Y_d, \text{ where } Y_d = Y - T$$

$$\text{Autonomous Investment (I)} = \text{Rs. 600 crores}$$

$$\text{Government Expenditure G} = \text{Rs. 900 crores}$$

$$\text{Taxes (T)} = \text{Rs. 100 crores}$$

$$\text{Exports (X)} = \text{Rs. 200 crores}$$

$$\text{Import Function (M)} = 50 + 0.3 Y$$

Where Y and Y_d National Income and Personal Disposable Income respectively. All the figures are in Rupees.

Find Out:

- (i) Equilibrium level of GDP
- (ii) Disposable Income
- (iii) Net Exports at Equilibrium GDP **(5 Marks)**
10. (a) (i) Explain how Reserve Bank of India acts as a 'lender of last resort' to commercial banks? **(3 Marks)**

(ii) Calculate (a) GDP_{MP} and (b) NNP_{FC} from the following data:

Particulars	(Rs.) In Crore
Net indirect tax	208
Consumption of fixed capital	42
Net factor income from abroad	-40
Rent	311
Profits	892
Interest	81
Royalty	6
Wages and salary	489
Employer's contribution to Social Security Scheme	50

(3 Marks)

- (b) (i) What are the different routes for securing FDI? **(2 Marks)**
(ii) What is meant by 'Voluntary Export Restraints'? **(2 Marks)**
11. (a) (i) What is meant by free trade policy? **(3 Marks)**
(ii) What is meant by 'safeguard measures' under WTO? **(2 Marks)**
- (b) (i) Explain the concept of adverse selection. What are the possible consequences of adverse selection? **(3 Marks)**
(ii) Mention the types of Transactions in the forex market? **(2 Marks)**

OR

What is the role of Liquidity Adjustment Facility? **(2 Marks)**

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PAPER 8A : FINANCIAL MANAGEMENT

ANSWERS

1. (a) Workings:

(i) Cost of Equity (K_e) = $\frac{D_1}{P_0} + g = \frac{₹ 3}{₹ 30} + 0.07 = 0.1 + 0.07 = 0.17 = 17\%$

(ii) Cost of Debentures (K_d) = $I (1 - t) = 0.09 (1 - 0.4) = 0.054$ or 5.4%

Computation of Weighted Average Cost of Capital (WACC using market value weights)

Source of capital	Market Value of capital (Rs.)	Weight	Cost of capital (%)	WACC (%)
9% Debentures	30,00,000	0.30	5.40	1.62
12% Preference Shares	10,00,000	0.10	12.00	1.20
Equity Share Capital (Rs. 30 × 2,00,000 shares)	60,00,000	0.60	17.00	10.20
Total	1,00,00,000	1.00		13.02

(b) (i) $ROCE = \frac{EBIT}{\text{Capital employed}} = \frac{Rs. 27,00,000}{Rs. 1,00,00,000} \times 100 = 27\%$

Workings:

(I) Calculation of EBT:	Rs.
Sales	75,00,000
Less: Variable costs	42,00,000
Contribution	33,00,000
Less: Fixed costs	6,00,000
EBIT	27,00,000
Less: Interest (12 % of Rs. 45,00,000)	5,40,000
EBT	21,60,000

Capital employed = Debt + Equity Shares = Rs. 1,00,00,000.

(ii) Since ROCE (27%) is higher than the interest payable on debt (12%). NSG has a favourable financial leverage.

(iii) Capital employed = Total assets = Rs. 1,00,00,000

Net sales = Rs. 75,00,000

Therefore, turnover ratio = $\frac{Rs. 75,00,000}{Rs. 1,00,00,000} = 0.75$

The industry average is 3 against NSG's ratio of 0.75. Hence NSG Ltd. has very low asset leverage.

$$\begin{aligned}
 \text{(iv) Operating leverage} &= \frac{\text{Contribution}}{\text{EBIT}} = \frac{\text{Rs. } 33,00,000}{\text{Rs. } 27,00,000} = 1.22 \\
 \text{Financial Leverage} &= \frac{\text{EBIT}}{\text{EBT}} = \frac{\text{Rs. } 27,00,000}{\text{Rs. } 21,60,000} = 1.25 \\
 \text{Combined leverage} &= \frac{\text{Contribution}}{\text{EBT}} = \frac{\text{Rs. } 33,00,000}{\text{Rs. } 21,60,000} = 1.53
 \end{aligned}$$

Or

$$\text{DCL} = \text{DOL} \times \text{DFL} = 1.22 \times 1.25 = 1.53$$

- (v) For EBT to become zero, a 100% reduction in the EBT is required. As the combined leverage is 1.53, sales have to drop approx. by $100/1.53 = 65.36\%$. Hence, the new sales will be:

$$\text{Rs. } 75,00,000 \times (1 - 0.6536) = \text{Rs. } 25,98,000 \text{ (approx.)}$$

- (c) (i) **Determination of Sales and Cost of goods sold:**

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

$$\text{Or, } \frac{25}{100} = \frac{\text{Rs. } 4,00,000}{\text{Sales}}$$

$$\text{Or, Sales} = \frac{4,00,00,000}{25} = \text{Rs. } 16,00,000$$

$$\begin{aligned}
 \text{Cost of Goods Sold} &= \text{Sales} - \text{Gross Profit} \\
 &= \text{Rs. } 16,00,000 - \text{Rs. } 4,00,000 = \text{Rs. } 12,00,000
 \end{aligned}$$

- (ii) **Determination of Sundry Debtors:**

Debtors velocity is 3 months or Debtors' collection period is 3 months,

$$\text{So, Debtors' turnover ratio} = \frac{12 \text{ months}}{3 \text{ months}} = 4$$

$$\begin{aligned}
 \text{Debtors' turnover ratio} &= \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}} \\
 &= \frac{\text{Rs. } 16,00,000}{\text{Bills Receivable} + \text{Sundry Debtors}} = 4
 \end{aligned}$$

$$\text{Or, Sundry Debtors} + \text{Bills receivable} = \text{Rs. } 4,00,000$$

$$\text{Sundry Debtors} = \text{Rs. } 4,00,000 - \text{Rs. } 25,000 = \text{Rs. } 3,75,000$$

- (iii) **Determination of Sundry Creditors:**

Creditors velocity of 2 months or credit payment period is 2 months.

$$\text{So, Creditors' turnover ratio} = \frac{12 \text{ months}}{2 \text{ months}} = 6$$

$$\text{Creditors turnover ratio} = \frac{\text{Credit Purchases}^*}{\text{Average Accounts Payables}}$$

$$= \frac{\text{Rs. 12,10,000}}{\text{Sundry Creditors + Bills Payables}} = 6$$

So, Sundry Creditors + Bills Payable = Rs. 2,01,667

Or, Sundry Creditors + Rs. 10,000 = Rs. 2,01,667

Or, Sundry Creditors = Rs. 2,01,667 – Rs. 10,000 = Rs. 1,91,667

(iv) Closing Stock

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} = \frac{\text{Rs. 12,00,000}}{\text{Average Stock}} = 1.5$$

So, Average Stock = Rs. 8,00,000

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

$$\text{Or } \frac{\text{Opening Stock} + (\text{Opening Stock} + \text{Rs. 10,000})}{2} = \text{Rs. 8,00,000}$$

Or, Opening Stock = Rs. 7,95,000

So, Closing Stock = Rs. 7,95,000 + Rs. 10,000 = Rs. 8,05,000

(v) Calculation of Fixed Assets

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Fixed Assets}} = 4$$

$$\text{Or, } \frac{\text{Rs. 12,00,000}}{\text{Fixed Assets}} = 4$$

Or, Fixed Asset = Rs. 3,00,000

Workings:

***Calculation of Credit purchases:**

Cost of goods sold = Opening stock + Purchases – Closing stock

Rs. 12,00,000 = Rs. 7,95,000 + Purchases – Rs. 8,05,000

Rs. 12,00,000 + Rs. 10,000 = Purchases

Rs. 12,10,000 = Purchases (credit).

Assumption:

- (i) All sales are credit sales
- (ii) All purchases are credit purchase
- (iii) Stock Turnover Ratio and Fixed Asset Turnover Ratio may be calculated either on Sales or on Cost of Goods Sold.

(d) As per MM model, the current market price of equity share is:

$$P_0 = \frac{1}{1+k_e} \times (D_1 + P_1)$$

(i) **If the dividend is not declared:**

$$100 = \frac{1}{1+0.12} (0 + P_1)$$

$$100 = \frac{P_1}{1.12} = P_1 = \text{Rs.112}$$

The Market price of the equity share at the end of the year would be Rs.112.

(ii) **If the dividend is declared:**

$$100 = \frac{1}{1+0.12} \times (10 + P_1)$$

$$100 = \frac{10 + P_1}{1.12}$$

$$112 = 10 + P_1$$

$$P_1 = 112 - 10 = \text{Rs.102}$$

The market price of the equity share at the end of the year would be Rs.102.

(iii) In case the firm pays dividend of Rs.10 per share out of total profits of Rs. 5,00,000 and plans to make new investment of Rs. 10,00,000, the number of shares to be issued may be found as follows:

Total Earnings	Rs.5,00,000
- Dividends paid	<u>(1,00,000)</u>
Retained earnings	4,00,000
Total funds required	<u>10,00,000</u>
Fresh funds to be raised	<u>6,00,000</u>
Market price of the share	102

Number of shares to be issued (Rs.6,00,000 / 102) 5,882.35

or, the firm would issue 5,883 shares at the rate of Rs.102

2. (i) **Computation of Weighted Average Cost of Capital based on existing capital structure**

Source of Capital	Existing Capital structure (Rs.)	Weights (a)	After tax cost of capital (%) (b)	WACC (%) (a) × (b)
Equity share capital (W.N.1)	40,00,000	0.500	15.00	7.500
11.5% Preference share capital (W.N.2)	10,00,000	0.125	11.50	1.437
10% Debentures (W.N.3)	30,00,000	0.375	6.50	2.438
	80,00,000	1.000		11.375

Working Notes (W.N.)

1. Cost of equity capital:

$$K_e = \frac{\text{Expected Dividend (D}_1\text{)}}{\text{Current Market Price per Share (P}_0\text{)}} + \text{Growth(g)}$$
$$= \frac{\text{Rs. 2}}{\text{Rs. 20}} + 0.05 = 0.15 \text{ or } 15\%$$

2. Cost of preference share capital:

$$= \frac{\text{Annual preference share dividend (PD)}}{\text{Net proceeds in the issue of preference share (NP)}}$$
$$= \frac{\text{Rs. 1,15,000}}{\text{Rs. 10,00,000}} = 0.115 \text{ or } 11.5\%$$

3. Cost of 10% Debentures:

$$= \frac{I(1-t)}{\text{NP}} = \frac{\text{Rs. 3,00,000}(1-0.35)}{\text{Rs. 30,00,000}} = 0.065 \text{ or } 6.5\%$$

(ii) Computation of Weighted Average Cost of Capital based on new capital structure

Source of Capital	New Capital structure (Rs.)	Weights (b)	After tax cost of capital (%) (a)	WACC (%) (a) × (b)
Equity share capital (W.N. 4)	40,00,000	0.40	20.00	8.00
Preference share (W.N. 2)	10,00,000	0.10	11.50	1.15
10% Debentures (W.N. 3)	30,00,000	0.30	6.50	1.95
12% Debentures (W.N.5)	20,00,000	0.20	7.80	1.56
	1,00,00,000	1.00		12.66

Working Notes (W.N.):

4. Cost of equity capital:

$$K_e = \frac{\text{Expected Dividend (D}_1\text{)}}{\text{Current Market Price per share (P}_0\text{)}} + \text{Growth(g)} = \frac{\text{₹ 2.40}}{\text{₹ 16}} + 5\% = 20\%$$

5. Cost of 12% Debentures

$$K_d = \frac{\text{₹ 2,40,000}(1-0.35)}{\text{₹ 20,00,000}} = 0.078 \text{ or } 7.8\%$$

3. Statement showing Evaluation of Credit Policies

(Amount in lakhs)

	Particulars	Present Policy (Rs.)	Proposed Policy I (Rs.)	Proposed Policy II (Rs.)
A	Expected Profit :			
	(a) Credit Sales	225.00	275.00	350.00
	(b) Total Cost other than Bad Debts:			

	Variable Costs	135.00	165.00	210.00
	(c) Bad Debts	7.50	22.50	47.50
	(d) Expected Profit [(a)-(b)-(c)]	82.50	87.50	92.50
B	Opportunity Cost of Investment in Receivables*	5.40	8.25	14.00
C	Net Benefits [A-B]	77.10	79.25	78.50

Recommendation: The Proposed Policy I should be adopted since the net benefits under this policy is higher than those under other policies.

Working Note:

***Calculation of Opportunity Cost of Average Investments**

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

Present Policy = Rs. 135 lakhs × 2.4/12 × 20% = Rs. 5.40 lakhs

Proposed Policy I = Rs. 165 lakhs × 3/12 × 20% = Rs. 8.25 lakhs

Proposed Policy II = Rs. 210 lakhs × 4/12 × 20% = Rs. 14.00 lakhs

4. (i) Computation of Earnings per Share (EPS)

Plans	P (Rs.)	Q (Rs.)	R (Rs.)
Earnings before interest & tax (EBIT)	18,00,000	18,00,000	18,00,000
Less: Interest charges	--	(2,00,000)	--
Earnings before tax (EBT)	18,00,000	16,00,000	18,00,000
Less: Tax @ 50%	(9,00,000)	(8,00,000)	(9,00,000)
Earnings after tax (EAT)	9,00,000	8,00,000	9,00,000
Less: Preference share dividend	--	--	(2,00,000)
Earnings available for equity shareholders	9,00,000	8,00,000	7,00,000
No. of equity shares	2,00,000	1,00,000	1,00,000
E.P.S	4.5	8	7

(ii) Computation of Financial Break-even Points

Proposal 'P' = 0

Proposal 'Q' = Rs. 2,00,000 (Interest charges)

Proposal 'R' = Earnings required for payment of preference share dividend i.e. Rs. 2,00,000 ÷ 0.5 (Tax Rate) = Rs. 4,00,000

(iii) Computation of Indifference Point between the Proposals

Combination of Proposals

(a) Indifference point where EBIT of proposal "P" and proposal 'Q' is equal

$$\frac{\text{EBIT}(1-0.5)}{2,00,000 \text{ shares}} = \frac{(\text{EBIT} - \text{Rs.} 2,00,000)(1-0.5)}{1,00,000 \text{ shares}}$$

$$0.5 \text{ EBIT} = \text{EBIT} - \text{Rs.} 2,00,000$$

$$\text{EBIT} = \text{Rs.} 4,00,000$$

(b) Indifference point where EBIT of proposal 'P' and proposal 'R' is equal:

$$\frac{\text{EBIT}(1-0.50)}{2,00,000 \text{ shares}} = \frac{\text{EBIT}(1-0.50) - \text{Rs.}2,00,000}{1,00,000 \text{ shares}}$$

$$\frac{0.5\text{EBIT}}{2,00,000 \text{ shares}} = \frac{0.5\text{EBIT} - \text{Rs.}2,00,000}{1,00,000 \text{ shares}}$$

$$0.25 \text{ EBIT} = 0.5 \text{ EBIT} - \text{Rs. } 2,00,000$$

$$\text{EBIT} = \frac{\text{Rs.}2,00,000}{0.25} = \text{Rs. } 8,00,000$$

(c) Indifference point where EBIT of proposal 'Q' and proposal 'R' are equal

$$\frac{(\text{EBIT} - \text{Rs.}2,00,000)(1-0.5)}{1,00,000 \text{ shares}} = \frac{\text{EBIT}(1-0.5) - \text{Rs.}2,00,000}{1,00,000 \text{ shares}}$$

$$0.5 \text{ EBIT} - \text{Rs.}1,00,000 = 0.5 \text{ EBIT} - \text{Rs.}2,00,000$$

There is no indifference point between proposal 'Q' and proposal 'R'

Analysis: It can be seen that financial proposal 'Q' dominates proposal 'R', since the financial break-even-point of the former is only Rs. 2,00,000 but in case of latter, it is Rs. 4,00,000.

5. (i) Calculation of Pay-back Period

Cash Outlay of the Project = Rs. 80,00,000

Total Cash Inflow for the first five years = Rs. 70,00,000

Balance of cash outlay left to be paid back in the 6th year Rs. 10,00,000

Cash inflow for 6th year = 16,00,000

So the payback period is between 5th and 6th years, i.e.,

$$5 \text{ years} + \frac{\text{Rs.}10,00,000}{\text{Rs.}6,00,000} = 5.625 \text{ years or } 5 \text{ years } 7.5 \text{ months}$$

(ii) Calculation of Net Present Value (NPV) @10% discount rate:

Year	Net Cash Inflow (Rs.)	Present Value at Discount Rate of 10%	Present Value (Rs.)
	(a)	(b)	(c) = (a) × (b)
1	14,00,000	0.909	12,72,600
2	14,00,000	0.826	11,56,400
3	14,00,000	0.751	10,51,400
4	14,00,000	0.683	9,56,200
5	14,00,000	0.621	8,69,400
6	16,00,000	0.564	9,02,400
7	20,00,000	0.513	10,26,000
8	30,00,000	0.467	14,01,000
9	20,00,000	0.424	8,48,000
10	8,00,000	0.386	3,08,800
			97,92,200

Net Present Value (NPV) = Cash Outflow – Present Value of Cash Inflows

$$= \text{Rs. } 80,00,000 - \text{Rs. } 97,92,200 = 17,92,200$$

(iii) Calculation of Profitability Index @ 10% discount rate:

$$\begin{aligned} \text{Profitability Index} &= \frac{\text{Present Value of Cash inflows}}{\text{Cost of the investment}} \\ &= \frac{\text{Rs. } 97,92,200}{\text{Rs. } 80,00,000} = 1.224 \end{aligned}$$

(iv) Calculation of Internal Rate of Return:

Net present value @ 10% interest rate factor has already been calculated in (ii) above, we will calculate Net present value @15% rate factor.

Year	Net Cash Inflow (Rs.)	Present Value at Discount Rate of 15%	Present Value (Rs.)
	(a)	(b)	(c) = (a) × (b)
1	14,00,000	0.870	12,18,000
2	14,00,000	0.756	10,58,400
3	14,00,000	0.658	9,21,200
4	14,00,000	0.572	8,00,800
5	14,00,000	0.497	6,95,800
6	16,00,000	0.432	6,91,200
7	20,00,000	0.376	7,52,000
8	30,00,000	0.327	9,81,000
9	20,00,000	0.284	5,68,000
10	8,00,000	0.247	1,97,600
			78,84,000

$$\text{Net Present Value at 15\%} = \text{Rs. } 78,84,000 - \text{Rs. } 80,00,000 = \text{Rs. } -1,16,000$$

As the net present value @ 15% discount rate is negative, hence internal rate of return falls in between 10% and 15%. The correct internal rate of return can be calculated as follows:

$$\begin{aligned} \text{IRR} &= L + \frac{\text{NPV}_L}{\text{NPV}_L - \text{NPV}_H} (H - L) \\ &= 10\% + \frac{\text{Rs. } 17,92,200}{\text{Rs. } 17,92,200 - (-\text{Rs. } 1,16,000)} (15\% - 10\%) \\ &= 10\% + \frac{\text{Rs. } 17,92,200}{\text{Rs. } 19,08,200} \times 5\% = 14.7\% \end{aligned}$$

6. (a) To achieve wealth maximization, a finance manager has to take careful decision in respect of:

- (i) **Investment decisions:** These decisions relate to the selection of assets in which funds will be invested by a firm. Funds procured from different sources have to be invested in various kinds of assets. Long term funds are used in a project for various fixed assets and also for current assets. The investment of funds in a project has to be made after careful assessment of the various projects through capital budgeting. A part of long term funds is also to be kept for financing the working capital requirements. Asset management policies are to be laid down regarding various items of current assets. The inventory policy would be determined by the

production manager and the finance manager keeping in view the requirement of production and the future price estimates of raw materials and the availability of funds.

- (ii) **Financing decisions:** These decisions relate to acquiring the optimum finance to meet financial objectives and seeing that fixed and working capital are effectively managed. The financial manager needs to possess a good knowledge of the sources of available funds and their respective costs and needs to ensure that the company has a sound capital structure, i.e. a proper balance between equity capital and debt. Financing decisions also call for a good knowledge of evaluation of risk, e.g. excessive debt carried high risk for an organization's equity because of the priority rights of the lenders.
- (iii) **Dividend decisions:** These decisions relate to the determination as to how much and how frequently cash can be paid out of the profits of an organisation as income for its owners/shareholders. The dividend decision thus has two elements – the amount to be paid out and the amount to be retained to support the growth of the organisation, the latter being also a financing decision; the level and regular growth of dividends represent a significant factor in determining a profit-making company's market value, i.e. the value placed on its shares by the stock market.

All three types of decisions are interrelated, the first two pertaining to any kind of organisation while the third relates only to profit-making organisations, thus it can be seen that financial management is of vital importance at every level of business activity, from a sole trader to the largest multinational corporation.

(b) Disadvantages of Certainty Equivalent Method

1. There is no Statistical or Mathematical model available to estimate certainty Equivalent. Assumption of risk being subjective, it varies on the perception of the risk by the management because of bias and individual opinions involved.
2. There is no objective or mathematical method to estimate certainty equivalents. Certainty Equivalent are subjective and vary as per each individual's estimate.
3. Certainty equivalents are decided by the management based on their perception of risk. However the risk perception of the shareholders who are the money lenders for the project is ignored. Hence it is not used often in corporate decision making.

Risk-adjusted Discount Rate Vs. Certainty-Equivalent

Certainty Equivalent Method is superior to Risk Adjusted Discount Rate Method as it does not assume that risk increases with time at constant rate. Each year's Certainty Equivalent Coefficient is based on level of risk impacting its cash flow. Despite its soundness, it is not preferable like Risk Adjusted Discount Rate Method. It is difficult to specify a series of Certainty Equivalent Coefficients but simple to adjust discount rates.

(c) Various advantages of Stock Spills are as follows:

1. It makes the share affordable to small investors.
2. Number of shares may increase the number of shareholders; hence the potential of investment may increase.

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

SECTION B: ECONOMICS FOR FINANCE

ANSWERS

7. (a) The ratio of ΔY to ΔI is called the investment multiplier, k .

$$k = \frac{\text{Change in Income}}{\text{Change in Investment}} = \frac{\Delta Y}{\Delta I}$$

$$\text{Here } \frac{2400}{600} = 4; \quad 4 = \frac{1}{1-MPC} = \frac{1}{MPS}$$

$$4 - 4MPC = 1$$

$$4 MPC = 4 - 1 = 3$$

$$MPC = \frac{3}{4} = 0.75$$

$$MPS = 1 - MPC = 0.25$$

- (b) The exchange rate channel works through expenditure switching between domestic and foreign goods. A reduction in policy rate lowers interest rates and reduces the relative returns and investors shift their funds into foreign assets and leads to depreciation in the exchange rate. Higher competitiveness of domestic producers increase export volumes and higher prices of imports discourage imports (or higher net exports) and increase demand for domestically produced goods and services. Consequently, domestic output and employment increases. High policy rates normally lead to an appreciation of the currency, as foreign investors seek higher returns and increase their demand for the currency. Appreciation of the domestic currency make domestically produced goods more expensive compared to foreign-produced goods. This causes net exports to fall; correspondingly domestic output and employment also fall.
- (c) Perfect information which implies that both buyers and sellers have complete information about anything that may influence their decision making is an important element of an efficient competitive market. Information failure occurs when lack of information can result in consumers and producers making decisions that do not maximize welfare. Information failure is widespread in numerous market exchanges due to complex nature of goods and services that are transacted, inaccurate and incomplete data, and non-availability of correct information.
- (d) Devaluation is a deliberate downward adjustment in the value of a country's currency relative to another currency, group of currencies or standard.
8. (a) (i) Cash Reserve Ratio (CRR) refers to the fraction of the total net demand and time liabilities (NDTL i.e. aggregate savings account, current account and fixed deposit balances) of a scheduled commercial bank in India which it should maintain as cash deposit with the Reserve Bank. This requirement applies uniformly to all scheduled banks in the country irrespective of its size or financial position. Non-Bank Financial Corporations (NBFCs) are outside the purview of this reserve requirement.
- Higher the CRR with the RBI, lower will be the liquidity in the system and availability of lendable surpluses with the commercial banks 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.
- (ii) For economic efficiency to be achieved, the market price should reflect social costs and not just the private costs. 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.

- (b) (i) **Leakages:** A leakage is an outflow or withdrawal of income from the circular flow. Leakages are money leaving the circular flow and therefore, not available for spending on currently produced goods and services. Leakages reduce the flow of income.

Injections: An injection is a non-consumption expenditure. It is an expenditure on goods and services produced within the domestic territory but not used by the domestic household for consumption purposes. Injections are exogenous additions to the circular flow and add to the total volume of the basic circular flow. In the two-sector model with households and firms, household saving is the only leakage and investment is the only injection. In the three-sector model which includes the government, saving and taxes are the two leakages and investment and government purchases are the two injections. In the four-sector model which includes foreign sector also, saving, taxes, and imports are the three leakages; investment, government purchases, and exports are the three injections.

The state of equilibrium occurs when the total leakages are equal to the total injections that occur in the economy. Savings + Taxes + Imports = Investment + Government Spending + Exports

- (ii) Moral hazard is associated with information failure and refers to a situation that increases the probability of occurrence of a loss or a larger than normal loss, because of a change in the unobservable or hard to observe behaviour of one of the parties in the transaction after the transaction has been made. Moral hazard is opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action. It arises from lack of information about someone's future behavior. Moral hazard occurs due to asymmetric information i.e., an individual knows more about his or her own actions than other people do. This leads to a distortion of incentives to take care or to exert effort when someone else bears the costs of the lack of care or effort. For example, in the insurance market, the expected loss from an adverse event increases as insurance coverage increases.
9. (a) (i) A unit of account is a common unit for measuring how much something is worth. The monetary unit (for e.g. Rupee, Dollar) serves as a numeraire or common measure value in terms of which the value of all goods, services, assets, liabilities, income, expenditure etc are measured and expressed. This helps in measuring and fixing the exchange values in terms of a common unit and avoids the problem of recording and expressing the value of each commodity in terms of quantities of other goods. Use of money as a unit of account thus
- reduces the number of exchange ratios between goods and services
 - makes it possible to keep business accounts
 - allows meaningful interpretation of prices, costs, and profits, and
 - facilitates a system of trade through orderly pricing, comparison of value and rational economic choices.
- (ii) The allocation responsibility of the governments involves suitable corrective action when private markets fail to provide the right and desirable combination of goods and services to ensure social welfare. In the absence of appropriate government intervention, market failures may occur and the resources are likely to be misallocated by too much production of certain goods or too little production of certain other goods. Thus, market failures provide the rationale for government's allocative function.

- (b) Given $C = 200 + 0.6Y_d$

$$I = \text{Rs. } 600 \text{ Crores}$$

$$G = \text{Rs.}900 \text{ crores}$$

$$T = \text{Rs.} 100 \text{ Crores}$$

$$\text{Exports, } X = 200 \text{ Crores}$$

$$\text{Import function} = M = 50+0.3Y$$

(i) Equilibrium level of GDP

$$Y = C + I + G + (X-M)$$

$$= 200 + 0.6Y_d + 600 + 900 + [200 - (50 + 0.3Y)]$$

$$Y = 200 + 0.6Y - 60 + 1500 + 150 - 0.3Y \quad [Y_d = Y - 100]$$

$$Y = 1790 + 0.3Y$$

$$Y - 0.3Y = 1790$$

$$Y = 2557.14$$

(ii) Disposable Income

$$Y_d = Y - T = 2557.14 - 100 = 2457.14$$

(iii) Net Exports at GDP level

$$X - M = 200 - (50 + 0.3Y)$$

$$= 200 - (50 + 0.3(2557.14))$$

$$= 150 - 767.14$$

$$= -617.14 \text{ crore}$$

10. (a) (i) The Marginal Standing Facility (MSF) is the last resort for banks to obtain funds once they exhaust all borrowing options including the liquidity adjustment facility on which the rates are lower compared to the MSF. Under this facility, the scheduled commercial banks can borrow additional amount of overnight money from the central bank over and above what is available to them through the LAF window by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit (a fixed per cent of their net demand and time liabilities deposits (NDTL) *liable to change*) at a penal rate of interest. The scheme has been introduced by RBI with the main aim of reducing volatility in the overnight lending rates in the inter-bank market and to enable smooth monetary transmission in the financial system. This provides a safety valve against unexpected liquidity shocks to the banking system.

(ii) $NDP_{FC} = \text{Compensation of Employees} + \text{Operating Surplus} + \text{Mixed Income}$

$$= (\text{viii}) + (\text{ix}) + (\text{iv}) + (\text{v}) + (\text{vi}) + (\text{vii}) = 489 + 50 + 311 + 892 + 81 + 6 = 1829 \text{ Crores}$$

$$GDP_{MP} = NDP_{FC} + \text{Depreciation} + \text{Net Indirect Tax}$$

$$= NDP_{FC} + (\text{ii}) + (\text{i}) = 1829 + 42 + 208 = 2079 \text{ Crores}$$

$$NNP_{FC} = NDP_{FC} + \text{Net Factor Income from Abroad}$$

$$= NDP_{FC} + (\text{iii}) = 2079 + (-40) = 2039 \text{ Crores}$$

(b) (i) The main forms of direct investments are: the opening of overseas companies, including the establishment of subsidiaries or branches, creation of joint ventures on a contract basis, joint development of natural resources and purchase or annexation of companies in the country receiving foreign capital.

- (ii) Voluntary Export Restraints (VERs) refer to a type of informal quota administered by an exporting country voluntarily restraining the quantity of goods that can be exported out of a country during a specified period of time.
11. (a) (i) Free trade policy is based on the principle of non-interference by government in foreign trade. The distinction between domestic trade and international trade disappears and goods and services are freely imported from and exported to the rest of the world. Buyers and sellers from separate economies voluntarily trade without the domestic government helping or hindering movements of goods and services between countries by applying tariffs, quotas, subsidies or prohibitions on their goods and services. The theoretical case for free trade is based on Adam Smith's argument that the division of labour among countries leads to specialization, greater efficiency, and higher aggregate production.
- (ii) A safeguard measures is an action taken to protect a specific domestic industry from an unexpected build-up of imports. Safeguard measures are initiated by countries to restrict imports of a product temporarily if its domestic industry is injured or threatened with serious injury caused by a surge in imports.
- (b) (i) Adverse selection is a situation in which asymmetric information about quality eliminates high-quality goods from a market. It is a form of market failure which occurs when buyers have better information than sellers due to hidden information, and this can distort the usual market process. For example, in the insurance market adverse selection is the tendency for people with higher risk to obtain insurance coverage to a greater extent than persons with lesser risk because compared to insurance buyers, insurers know less about the health conditions of buyers and are therefore unable to differentiate between high-risk and low-risk persons. If the insurance company charges an average price, and only high-risk consumers buy insurance it will make losses. It is therefore possible that there will be higher overall premium as firms insure themselves against high-risk customers buying insurance. Then the low-risk customers may not want to buy insurance because it is quite expensive. Economic agents end up either selecting a sub-standard product or leaving the market altogether leading to a condition of 'missing market'. If the sellers wish to do business profitably, they may have to incur considerable costs in terms of time and money for identifying the extent of risk for different buyers.
- (b) (ii) There are two types of transactions in a forex market; current transactions which are carried out in the spot market and contracts to buy or sell currencies for future delivery which are carried out in forward and futures markets.

Or

The Liquidity Adjustment Facility(LAF) is a facility extended by the Reserve Bank of India to the scheduled commercial banks (excluding RRBs) and primary dealers to avail of liquidity in case of requirement (or park excess funds with the RBI in case of excess liquidity) on an overnight basis against the collateral of government securities including state government securities.