

MOCK TEST PAPER 1
INTERMEDIATE (NEW): GROUP – II
PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE
PAPER 8A : FINANCIAL MANAGEMENT

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.

Time Allowed – 3 Hours (Total time for 8A and 8B)

Maximum Marks – 60

1. Answer the following:

(a) The following figures are collected from the annual report of XYZ Ltd.:

Net Profit	Rs.60 lakhs
Outstanding 10% preference shares	Rs.100 lakhs
No. of equity shares	5 lakhs
Return on Investment	20%
Cost of capital i.e. (K_e)	14%

CALCULATE price per share using Gordon's Model when dividend pay-out is (i) 25%;
 (ii) 50% and (iii) 100%.

(b) RPS Company presently has Rs. 36,00,000 in debt outstanding bearing an interest rate of 10 per cent. It wishes to finance a Rs. 40,00,000 expansion programme and is considering three alternatives: additional debt at 12 per cent interest, preferred stock with an 11 per cent dividend, and the sale of common stock at Rs. 16 per share. The company presently has 8,00,000 shares of common stock outstanding and is in a 40 per cent tax bracket.

(i) If earnings before interest and taxes are presently Rs. 15,00,000, CALCULATE earnings per share for the three alternatives, assuming no immediate increase in profitability?

(ii) CALCULATE indifference point between debt and common stock.

(c) MNP Limited has made plans for the year 2019 -20. It is estimated that the company will employ total assets of Rs.50,00,000; 30% of assets being financed by debt at an interest cost of 9% p.a. The direct costs for the year are estimated at Rs. 30,00,000 and all other operating expenses are estimated at Rs. 4,80,000. The sales revenue are estimated at Rs. 45,00,000. Tax rate is assumed to be 40%. CALCULATE:

(i) Net profit margin (After tax);

(ii) Return on Assets (After tax);

(iii) Asset turnover; and

(iv) Return on Equity.

(d) A Ltd. and B Ltd. are identical in every respect except capital structure. A Ltd. does not employ debts in its capital structure whereas B Ltd. employs 12% Debentures amounting to Rs.100 lakhs. Assuming that :

- (i) All assumptions of M-M model are met;
- (ii) Income-tax rate is 30%;
- (iii) EBIT is Rs. 25,00,000 and
- (iv) The Equity capitalization rate of 'A' Ltd. is 20%.

CALCULATE the value of both the companies and also find out the Weighted Average Cost of Capital for both the companies. **[4 × 5 = 20 Marks]**

2. (a) B LLP. has the following balance sheet and Income statement information:

Balance Sheet as on March 31st 2019

Liabilities	(Rs.)	Assets	(Rs.)
Partners' Capital	80,00,000	Net Fixed Assets	1,00,00,000
Term Loan	60,00,000	Inventories	45,00,000
Retained Earnings	35,00,000	Trade Receivables	40,50,000
Trade Payables	15,00,000	Cash & Bank	4,50,000
	1,90,00,000		1,90,00,000

Income Statement for the year ending March 31st 2019

	(Rs.)
Sales	34,00,000
Operating expenses (including Rs. 6,00,000 depreciation)	12,00,000
EBIT	22,00,000
Less: Interest	6,00,000
Earnings before tax	16,00,000
Less: Taxes	5,60,000
Net Earnings (EAT)	10,40,000

COMPUTE the degree of operating, financial and combined leverages at the current sales level, if all operating expenses, other than depreciation, are variable costs. **[3 Marks]**

- (b) H Ltd. is considering a new product line to supplement its range of products. It is anticipated that the new product line will involve cash investments of Rs.70,00,000 at time 0 and Rs.1,00,00,000 in year 1. After-tax cash inflows of Rs. 25,00,000 are expected in year 2, Rs.30,00,000 in year 3, Rs.35,00,000 in year 4 and Rs.40,00,000 each year thereafter through year 10. Although the product line might be viable after year 10, the company prefers to be conservative and end all calculations at that time.
- (i) If the required rate of return is 15 per cent, FIND OUT the net present value of the project? Is it acceptable?
 - (ii) COMPUTE NPV if the required rate of return were 10 per cent?
 - (iii) COMPUTE the internal rate of return? **[7 Marks]**

3. You are given the following information:

- (i) Estimated monthly Sales are as follows:

	Rs.		Rs.
January	1,00,000	June	80,000
February	1,20,000	July	1,00,000

March	1,40,000	August	80,000
April	80,000	September	60,000
May	60,000	October	1,00,000

(ii) Wages and Salaries are estimated to be payable as follows:

	Rs.		Rs.
April	9,000	July	10,000
May	8,000	August	9,000
June	10,000	September	9,000

- (iii) Of the sales, 80% is on credit and 20% for cash. 75% of the credit sales are collected within one month and the balance in two months. There are no bad debt losses.
- (iv) Purchases amount to 80% of sales and are made and paid for in the month preceding the sales.
- (v) The firm has taken a loan of Rs.1,20,000. Interest @ 10% p.a. has to be paid quarterly in January, April and so on.
- (vi) The firm is to make payment of tax of Rs. 5,000 in July, 2019.
- (vii) The firm had a cash balance of Rs. 20,000 on 1st April, 2019 which is the minimum desired level of cash balance. Any cash surplus/deficit above/below this level is made up by temporary investments/liquidation of temporary investments or temporary borrowings at the end of each month (interest on these to be ignored).

Required

PREPARE monthly cash budgets for six months beginning from April, 2019 on the basis of the above information. **[10 Marks]**

4. ABC Ltd. has the following capital structure which is considered to be optimum as on 31st March, 2019

	(Rs.)
14% Debentures	30,00,000
11% Preference shares	10,00,000
Equity Shares (10,000 shares)	1,60,00,000
	2,00,00,000

The company share has a market price of Rs. 236. Next year dividend per share is 50% of year 2019 EPS. The following is the trend of EPS for the preceding 10 years which is expected to continue in future.

Year	EPS (Rs.)	Year	EPS Rs.)
2010	10.00	2015	16.10
2011	11.00	2016	17.70
2012	12.10	2017	19.50
2013	13.30	2018	21.50
2014	14.60	2019	23.60

The company issued new debentures carrying 16% rate of interest and the current market price of debenture is Rs. 96.

Preference share Rs. 9.20 (with annual dividend of Rs. 1.1 per share) were also issued. The company is in 50% tax bracket.

- (A) CALCULATE after tax:
- Cost of new debt
 - Cost of new preference shares
 - New equity share (consuming new equity from retained earnings)
- (B) CALCULATE marginal cost of capital when no new shares are issued.
- (C) COMPUTE the amount that can be spent for capital investment before new ordinary shares must be sold. Assuming that retained earnings for next year's investment are 50 percent of 2019.
- (D) COMPUTE marginal cost of capital when the funds exceeds the amount calculated in (C), assuming new equity is issued at Rs. 200 per share? **[10 Marks]**

5. (a) CALCULATE Variance and Standard Deviation on the basis of following information:

Possible Event	Project A		Project B	
	Cash Flow (Rs.)	Probability	Cash Flow (Rs.)	Probability
A	80,000	0.10	2,40,000	0.10
B	1,00,000	0.20	2,00,000	0.15
C	1,20,000	0.40	1,60,000	0.50
D	1,40,000	0.20	1,20,000	0.15
E	1,60,000	0.10	80,000	0.10

[8 Marks]

- (b) A firm maintains a separate account for cash disbursement. Total disbursement are Rs.10,50,000 per month or Rs. 1,26,00,000 per year. Administrative and transaction cost of transferring cash to disbursement account is Rs.20 per transfer. Marketable securities yield is 8% per annum.

COMPUTE the optimum cash balance according to William J. Baumol model. **[2 Marks]**

6. (a) DISCUSS the Inter relationship between investment, financing and dividend decisions.
- (b) What is debt securitisation? EXPLAIN the basics of debt securitisation process.
- (c) EXPLAIN the concept of discounted payback period. **(4 + 4+ 2 =10 Marks)**

PAPER – 8B: ECONOMICS FOR FINANCE

Time Allowed – 1:15 Hours

Maximum Marks - 40

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 7 is compulsory question.

*Attempt any **three** from the remaining four questions*

In case, any candidate answers extra questions(s)/sub-question(s)/sub-question(s) over and above the required number, then only the requisite number of questions first answered will be the evaluated the rest answer shall be ignored

Working Notes should form part of the answer.

7. (a) Calculate National Income by Value Added Method with the help of following data-

Particulars	Rs. (in crore)	
Sales	700	
Opening stock	500	
Intermediate Consumption	350	
Closing Stock	400	
Net Factor Income from Abroad	30	
Depreciation	150	
Excise Tax	110	
Subsidies	50	(3 Marks)

- (b) Define Social Good? What is the similarity and dissimilarity between Social Goods and Common Pool Resources? **(2 Marks)**

- (c) Why Marginal Standing Facility (MSF) would be the last resort for banks? **(3 Marks)**

- (d) Assume that 15% specific tariff is levied by the government on every sunglass which is imported into India, and if 2000 sunglasses are imported and price of each sunglass is Rs.1000/- , then find out the amount of total tariff revenue collected by the government? **(2 Marks)**

8. (a) (i) Suppose $M_3 = \text{Rs. } 450000 \text{ Crore}$

Currency with Public = Rs 3000 Crore

Demand Deposits of Banks = Rs. 100000 Crore

Other deposits with RBI= Rs. 100000 Crore

Saving Deposits with Post Office Saving Banks = Rs. 150000 Crore

Total deposits with the Post Office Savings Organization (excluding National Saving Certificate) = Rs. 20000 Crore

National Saving Certificate = Rs. 250 Crore

Calculate Net Time Deposits and M_4 with the banking system? **(3 Marks)**

- (ii) Compare transaction demand for money according to Keynes and Baumol & Tobin?

(2 Marks)

- (b) How does trade increase economic efficiency and which view argued that trade is a zero-sum game and how? **(3 Marks)**
- (c) Is country like India unable to estimate their National Income wholly by one method? Give comments **(2 Marks)**
9. (a) How does the government intervene to minimize market power? **(5 Marks)**
- (b) Define the deposit expansion multiplier? How it is calculated? **(3 Marks)**
- (c) Suppose MPC is 0.8 and it is planned to increase National Income by Rs. 3000 Crore then how much increase in investment is required to fulfill this target? **(2 Marks)**
10. (a) What is meant by foreign exchange market? What are the roles played by the participants in the foreign exchange market? **(5 Marks)**
- (b) Define 'Net Factor Income from Abroad' **(3 Marks)**
- (c) Determine the government spending multiplier when there is an increase of Rs.100 crore in government spending and MPC is 0.75 ? And also find out the net effect of Rs. 100 crore spending? **(2 Marks)**
11. (a) (i) What are the main advantages of fixed rate regime in an open economy? **(3 Marks)**
- (ii) How the autonomous expenditure multiplier is stated in four sector model? **(2 Marks)**
- (b) (i) What is non-discretionary fiscal policy and how it occurs? **(3 Marks)**
- (ii) Explain the concept of demand for money? **(2 Marks)**

Or

Define the term Regional Trade Agreement (RTAs)? **(2 Marks)**

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Suggested Answers/Hints

1. (a)

	Rs. in lakhs
Net Profit	60
Less: Preference dividend	10
Earning for equity shareholders	50
Therefore earning per share	50/5 = Rs.10.00

Price per share according to Gordon's Model is calculated as follows:

$$P_0 = \frac{E_1(1-b)}{K_e - br}$$

Here, $E_1 = 10$, $K_e = 14\%$, $r = 20\%$

(i) When dividend pay-out is 25%

$$P_0 = \frac{10 \times 0.25}{0.14 - (0.75 \times 0.2)} = \frac{2.5}{0.14 - 0.15} = -250$$

As per the Gordon's Dividend relevance model, the Cost of equity (K_e) should be greater than the growth rate i.e. br . In this case K_e is 14% and $br = 15\%$, hence, the equity investors would prefer capital appreciation than dividend.

(ii) When dividend pay-out is 50%

$$P_0 = \frac{10 \times 0.5}{0.14 - (0.5 \times 0.2)} = \frac{5}{0.14 - 0.10} = 125$$

(iii) When dividend pay-out is 100%

$$P_0 = \frac{10 \times 1}{0.14 - (0 \times 0.2)} = \frac{10}{0.14} = 71.43$$

(b) (i)

(Rs. in thousands)

	<i>Debt</i>	<i>Preferred Stock</i>	<i>Common Stock</i>
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
EBIT	1,500	1,500	1,500
Interest on existing debt	360	360	360
Interest on new debt	<u>480</u>	<u>—</u>	<u>—</u>
Profit before taxes	660	1,140	1,140
Taxes	<u>264</u>	<u>456</u>	<u>456</u>
Profit after taxes	396	684	684

Preferred stock dividend	—	440	—
Earnings available to common shareholders	396	244	684
Number of shares	800	800	1,050
Earnings per share	.495	.305	.651

(ii) Mathematically, the indifference point between debt and common stock is (Rs in thousands):

$$\frac{\text{EBIT}^* - \text{Rs. } 840}{800} = \frac{\text{EBIT}^* - \text{Rs. } 360}{1,050}$$

$$\text{EBIT}^* (1,050) - \text{Rs. } 840(1,050) = \text{EBIT}^* (800) - \text{Rs. } 360 (800)$$

$$250\text{EBIT}^* = \text{Rs. } 5,94,000$$

$$\text{EBIT}^* = \text{Rs. } 2,376$$

(c) The net profit is calculated as follows:

	Rs.
Sales Revenue	45,00,000
Less: Direct Costs	30,00,000
Gross Profits	15,00,000
Less: Operating Expense	4,80,000
Earnings before Interest and tax (EBIT)	10,20,000
Less: Interest on debt (9% × 15,00,000)	1,35,000
Earnings before Tax (EBT)	8,85,000
Less: Taxes (@ 40%)	3,54,000
Profit after Tax (PAT)	5,31,000

(i) Net Profit Margin (After Tax)

$$\text{Net Profit Margin} = \frac{\text{EBIT} (1-t)}{\text{Sales}} \times 100 = \frac{\text{Rs. } 10,20,000 \times (1-0.4)}{\text{Rs. } 45,00,000} = 13.6\%$$

(ii) Return on Assets (ROA) (After tax)

$$\begin{aligned} \text{ROA} &= \frac{\text{EBIT} (1-t)}{\text{Total Assets}} \\ &= \frac{\text{Rs. } 10,20,000 (1-0.4)}{\text{Rs. } 50,00,000} = \frac{\text{Rs. } 6,12,000}{\text{Rs. } 50,00,000} \\ &= 0.1224 = 12.24\% \end{aligned}$$

(iii) Asset Turnover

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Assets}} = \frac{\text{Rs. } 45,00,000}{\text{Rs. } 50,00,000} = 0.9$$

$$\text{Asset Turnover} = 0.9 \text{ times}$$

(iv) Return on Equity (ROE)

$$\text{ROE} = \frac{\text{PAT}}{\text{Equity}} = \frac{\text{Rs. } 5,31,000}{\text{Rs. } 35,00,000} = 15.17\%$$

$$\text{ROE} = 15.17\%$$

(d) (i) **Calculation of Value of 'A Ltd.' and 'B Ltd' according to MM Hypothesis**

Market Value of 'A Ltd' (Unlevered)

$$V_u = \frac{\text{EBIT} (1 - t)}{K_e} = \frac{\text{Rs.}25,00,000(1-0.30)}{20\%} = \frac{\text{Rs.}17,50,000}{20\%} = \text{Rs.}87,50,000$$

Market Value of 'B Ltd.' (Levered)

$$\begin{aligned} V_g &= V_u + TB \\ &= \text{Rs.}87,50,000 + (\text{Rs.}1,00,00,000 \times 0.30) \\ &= \text{Rs.}87,50,000 + \text{Rs.}30,00,000 = \text{Rs.}1,17,50,000 \end{aligned}$$

(ii) **Computation of Weighted Average Cost of Capital (WACC)**

WACC of 'A Ltd.' = 20% (i.e. $K_e = K_o$)

WACC of 'B Ltd.'

	B Ltd. (Rs.)
EBIT	25,00,000
Interest to Debt holders	(12,00,000)
EBT	13,00,000
Taxes @ 30%	(3,90,000)
Income available to Equity Shareholders	9,10,000
Total Value of Firm	1,17,50,000
Less: Market Value of Debt	(1,00,00,000)
Market Value of Equity	17,50,000
Return on equity (K_e) = 9,10,000 / 17,50,000	0.52

Computation of WACC B. Ltd

Component of Capital	Amount	Weight	Cost of Capital	WACC
Equity	17,50,000	0.149	0.52	0.0775
Debt	1,00,00,000	0.851	0.084*	0.0715
Total	1,17,50,000			0.1490

$$*K_d = 12\% (1 - 0.3) = 12\% \times 0.7 = 8.4\%$$

$$\text{WACC} = 14.90\%$$

2. (a) **Computation of Degree of Operating (DOL), Financial (DFL) and Combined leverages (DCL).**

$$\text{DOL} = \frac{\text{Rs.}34,00,000 - \text{Rs.}6,00,000}{\text{Rs.}22,00,000} = 1.27$$

$$\text{DFL} = \frac{\text{Rs.}22,00,000}{\text{Rs.}16,00,000} = 1.38$$

$$\text{DCL} = \text{DOL} \times \text{DFL} = 1.27 \times 1.38 = 1.75$$

(b) (i)

Year	Cash flow (Rs.)	Discount Factor (15%)	Present value (Rs.)
0	(70,00,000)	1.000	(70,00,000)
1	(1,00,00,000)	0.870	(87,00,000)
2	25,00,000	0.756	18,90,000
3	30,00,000	0.658	19,74,000
4	35,00,000	0.572	20,02,000
5-10	40,00,000	2.163	86,52,000
		Net Present Value	(11,82,000)

As the net present value is negative, the project is unacceptable.

(ii) Similarly, NPV at 10% discount rate can be computed as follows:

Year	Cash flow (Rs.)	Discount Factor (10%)	Present value (Rs.)
0	(70,00,000)	1.000	(70,00,000)
1	(1,00,00,000)	0.909	(90,90,000)
2	25,00,000	0.826	20,65,000
3	30,00,000	0.751	22,53,000
4	35,00,000	0.683	23,90,500
5-10	40,00,000	2.974	1,18,96,000
		Net Present Value	25,14,500

Since NPV = Rs.25,14,500 is positive, hence the project would be acceptable.

$$\begin{aligned}
 \text{(iii) IRR} &= \text{LR} + \frac{\text{NPV at LR}}{\text{NPV at LR} - \text{NPV at HR}} \times (\text{HR} - \text{LR}) \\
 &= 10\% + \frac{\text{Rs.}25,14,500}{\text{Rs.}25,14,500 - (-)11,82,000} \times (15\% - 10\%) \\
 &= 10\% + 3.4012 \text{ or } 13.40\%
 \end{aligned}$$

3. Computation – Collections from Debtors

Particulars	Feb (Rs.)	Mar (Rs.)	Apr (Rs.)	May (Rs.)	Jun (Rs.)	Jul (Rs.)	Aug (Rs.)	Sep (Rs.)
Total Sales	1,20,000	1,40,000	80,000	60,000	80,000	1,00,000	80,000	60,000
Credit Sales (80% of total Sales)	96,000	1,12,000	64,000	48,000	64,000	80,000	64,000	48,000
Collection (within one month)		72,000	84,000	48,000	36,000	48,000	60,000	48,000

Collection (within two months)		24,000	28,000	16,000	12,000	16,000	20,000
Total Collections		1,08,000	76,000	52,000	60,000	76,000	68,000

Monthly Cash Budget for Six Months: April to September, 2019

Particulars	April (Rs.)	May (Rs.)	June (Rs.)	July (Rs.)	August (Rs.)	Sept. (Rs.)
Receipts:						
Opening Balance	20,000	20,000	20,000	20,000	20,000	20,000
Cash Sales	16,000	12,000	16,000	20,000	16,000	12,000
Collections from Debtors	1,08,000	76,000	52,000	60,000	76,000	68,000
Total Receipts (A)	1,44,000	1,08,000	88,000	1,00,000	1,12,000	1,00,000
Payments:						
Purchases	48,000	64,000	80,000	64,000	48,000	80,000
Wages and Salaries	9,000	8,000	10,000	10,000	9,000	9,000
Interest on Loan	3,000	-----	-----	3,000	-----	-----
Tax Payment	-----	-----	-----	5,000	-----	-----
Total Payment (B)	60,000	72,000	90,000	82,000	57,000	89,000
Minimum Cash Balance	20,000	20,000	20,000	20,000	20,000	20,000
Total Cash Required (C)	80,000	92,000	1,10,000	1,02,000	77,000	1,09,000
Surplus/ (Deficit) (A)-(C)	64,000	16,000	(22,000)	(2,000)	35,000	(9,000)
Investment/Financing:						
Total effect of (Invest)/ Financing (D)	(64,000)	(16,000)	22,000	2,000	(35,000)	9,000
Closing Cash Balance (A) + (D) - (B)	20,000	20,000	20,000	20,000	20,000	20,000

4. (A) (i) Cost of new debt

$$K_d = \frac{l(1-t)}{P_0}$$

$$= \frac{16(1-0.5)}{96} = 0.0833$$

(ii) Cost of new preference shares

$$K_p = \frac{PD}{P_0} = \frac{1.1}{9.2} = 0.12$$

(iii) Cost of new equity shares

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

$$= \frac{11.80}{236} + 0.10 = 0.05 + 0.10 = 0.15$$

Calculation of D₁

$$D_1 = 50\% \text{ of } 2019 \text{ EPS} = 50\% \text{ of } 23.60 = \text{Rs. } 11.80$$

(B) Calculation of marginal cost of capital

Type of Capital	Proportion	Specific Cost	Product
(1)	(2)	(3)	(2) × (3) = (4)
Debenture	0.15	0.0833	0.0125
Preference Share	0.05	0.12	0.0060
Equity Share	0.80	0.15	0.1200
Marginal cost of capital			0.1385

- (C) The company can spend the following amount without increasing marginal cost of capital and without selling the new shares:

$$\text{Retained earnings} = (0.50) (236 \times 10,000) = \text{Rs. } 11,80,000$$

The ordinary equity (Retained earnings in this case) is 80% of total capital

$$11,80,000 = 80\% \text{ of Total Capital}$$

$$\text{Capital investment before issuing equity} = \frac{\text{Rs. } 11,80,000}{0.80} = \text{Rs. } 14,75,000$$

- (D) If the company spends in excess of Rs.14,75,000 it will have to issue new shares.

$$\text{The cost of new issue will be} = \frac{\text{Rs. } 11.80}{200} + 0.10 = 0.159$$

The marginal cost of capital will be:

Type of Capital	Proportion	Specific Cost	Product
(1)	(2)	(3)	(2) × (3) = (4)
Debentures	0.15	0.0833	0.0125
Preference Shares	0.05	0.1200	0.0060
Equity Shares (New)	0.80	0.1590	0.1272
			0.1457

5. (a) **Calculation of Expected Value for Project A and Project B**

Project A				Project B		
Possible Event	Net Cash Flow (Rs.)	Probability	Expected Value (Rs.)	Cash Flow (Rs.)	Probability	Expected Value (Rs.)
A	80,000	0.10	8,000	2,40,000	0.10	24,000
B	1,00,000	0.20	20,000	2,00,000	0.15	30,000
C	1,20,000	0.40	48,000	1,60,000	0.50	80,000
D	1,40,000	0.20	28,000	1,20,000	0.15	18,000
E	1,60,000	0.10	16,000	80,000	0.10	8,000
ENCF			1,20,000			1,60,000

Project A

$$\text{Variance } (\sigma^2) = (80,000 - 1,20,000)^2 \times (0.1) + (1,00,000 - 1,20,000)^2 \times (0.2) + (1,20,000 - 1,20,000)^2 \times (0.4) + (1,40,000 - 1,20,000)^2 \times (0.2) + (1,60,000 - 1,20,000)^2 \times (0.1)$$

$$= 16,00,00,000 + 8,00,00,000 + 0 + 8,00,00,000 + 16,00,00,000$$

$$= 48,00,00,000$$

$$\text{Standard Deviation } (\sigma) = \sqrt{\text{Variance}(\sigma^2)} = \sqrt{48,00,00,000} = 21,908.90$$

Project B:

$$\text{Variance}(\sigma^2) = (2,40,000 - 1,60,000)^2 \times (0.1) + (2,00,000 - 1,60,000)^2 \times (0.15) + (1,60,000 - 1,60,000)^2 \times (0.5) + (1,20,000 - 1,60,000)^2 \times (0.15) + (80,000 - 1,60,000)^2 \times (0.1)$$

$$= 64,00,00,000 + 24,00,00,000 + 0 + 24,00,00,000 + 64,00,00,000$$

$$= 1,76,00,00,000$$

$$\text{Standard Deviation } (\sigma) = \sqrt{1,76,00,00,000} = 41,952.35$$

(b) The optimum cash balance $C = \sqrt{\frac{2 \times \text{Rs. } 1,26,00,000 \times \text{Rs. } 20}{0.08}} = \text{Rs. } 79,372.54$

6. (a) **Inter-relationship between Investment, Financing and Dividend Decisions:** The finance functions are divided into three major decisions, viz., investment, financing and dividend decisions. It is correct to say that these decisions are inter-related because the underlying objective of these three decisions is the same, i.e. maximisation of shareholders' wealth. Since investment, financing and dividend decisions are all interrelated, one has to consider the joint impact of these decisions on the market price of the company's shares and these decisions should also be solved jointly. The decision to invest in a new project needs the finance for the investment. The financing decision, in turn, is influenced by and influences dividend decision because retained earnings used in internal financing deprive shareholders of their dividends. An efficient financial management can ensure optimal joint decisions. This is possible by evaluating each decision in relation to its effect on the shareholders' wealth.

The above three decisions are briefly examined below in the light of their inter-relationship and to see how they can help in maximising the shareholders' wealth i.e. market price of the company's shares.

Investment decision: The investment of long term funds is made after a careful assessment of the various projects through capital budgeting and uncertainty analysis. However, only that investment proposal is to be accepted which is expected to yield at least so much return as is adequate to meet its cost of financing. This has an influence on the profitability of the company and ultimately on its wealth.

Financing decision: Funds can be raised from various sources. Each source of funds involves different issues. The finance manager has to maintain a proper balance between long-term and short-term funds. With the total volume of long-term funds, he has to ensure a proper mix of loan funds and owner's funds. The optimum financing mix will increase return to equity shareholders and thus maximise their wealth.

Dividend decision: The finance manager is also concerned with the decision to pay or declare dividend. He assists the top management in deciding as to what portion of the profit should be paid to the shareholders by way of dividends and what portion should be retained in the business. An optimal dividend pay-out ratio maximises shareholders' wealth.

The above discussion makes it clear that investment, financing and dividend decisions are interrelated and are to be taken jointly keeping in view their joint effect on the shareholders' wealth.

- (b) **Debt Securitisation:** It is a method of recycling of funds. It is especially beneficial to financial intermediaries to support the lending volumes. Assets generating steady cash flows are packaged together and against this asset pool, market securities can be issued, e.g. housing finance, auto loans, and credit card receivables.

Process of Debt Securitisation

- (i) *The origination function* – A borrower seeks a loan from a finance company, bank, HDFC. The credit worthiness of borrower is evaluated and contract is entered into with repayment schedule structured over the life of the loan.
- (ii) *The pooling function* – Similar loans on receivables are clubbed together to create an underlying pool of assets. The pool is transferred in favour of Special purpose Vehicle (SPV), which acts as a trustee for investors.
- (iii) *The securitisation function* – SPV will structure and issue securities on the basis of asset pool. The securities carry a coupon and expected maturity which can be asset-based/mortgage based. These are generally sold to investors through merchant bankers. Investors are – pension funds, mutual funds, insurance funds.

The process of securitization is generally without recourse i.e. investors bear the credit risk and issuer is under an obligation to pay to investors only if the cash flows are received by him from the collateral. The benefits to the originator are that assets are shifted off the balance sheet, thus giving the originator recourse to off-balance sheet funding.

(c) **Concept of Discounted Payback Period**

Payback period is time taken to recover the original investment from project cash flows. It is also termed as break even period. The focus of the analysis is on liquidity aspect and it suffers from the limitation of ignoring time value of money and profitability. Discounted payback period considers present value of cash flows, discounted at company's cost of capital to estimate breakeven period i.e. it is that period in which future discounted cash flows equal the initial outflow. The shorter the period, better it is. It also ignores post discounted payback period cash flows.

PAPER 8B : ECONOMICS FOR FINANCE

SUGGESTED ANSWERS/HINTS

7. (a) $NI = GDP_{(MP)} - \text{Depreciation} + \text{NFIA} - \text{Net Indirect Tax}$
Where $GDP_{(MP)} = \text{Value of output} - \text{intermediate consumption}$
Value of Output = Sales + change in stock
= 700 + (400 - 500)
= 600
 $GDP_{(MP)} = 600 - 350 = 250$
Therefore $NI = 250 - 150 + 30 - (110 - 50)$
= 70 Crore
- (b) A Social Good is defined as one which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good. Similarity between Social Goods and Common Pool Resources is that both are non-excludable whereas dissimilarity is seen in their nature that is Social Goods are non-rival which means that the use of these goods does not reduce the availability for others, while Common Pool Resources are rival in nature which means that the use of these resources reduce the availability for others.
- (c) The Marginal Standing Facility (MSF) refers to the facility under which scheduled commercial banks can borrow additional amount of overnight money from the central bank over and above what is available to them through the LAF window by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit. 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. Banks can borrow through MSF on all working days except Saturdays, between 7.00 pm and 7.30 pm, in Mumbai. The minimum amount which can be accessed through MSF is ₹ 1 crore and more will be available in multiples of ₹ 1 crore. The MSF would be the last resort for banks once they exhaust all borrowing options including the liquidity adjustment facility on which the rates are lower compared to the MSF.
- (d) Specific tariff is an import duty which levied as a fixed charge per unit of the good imported.
Therefore amount in total tariff revenue = $2000 * 15\%$
= Rs. 300/-
In this case, total Rs. 300/- is collected, whether the price of a sunglass is of Rs. 1000 or Rs. 2000 for different brand.
8. (a) (i) $M_3 = M_1 + \text{net time deposits with the banking system}$
 $M_1 = \text{Currency notes and coins with the public} + \text{demand deposits of banks} + \text{other deposits with RBI}$
Therefore, Net time deposits with the banking system = $M_3 - M_1$
 $450000 - 3000 - 100000 - 100000$
= Rs. 247000 Crore
 $M_4 = M_3 + \text{total deposits with the post office savings organization (excluding National savings Certificate)}$
 $M_4 = 450000 + 20000$
 $M_4 = 470000 \text{ Crore.}$

- (ii) The transaction demand for money according to Keynes is interest-inelastic; whereas Baumol and Tobin show that money held for transaction purposes is interest elastic.
- (b) Economic efficiency increases due to quantitative and qualitative benefits of extended division of labour, economies of large scale production, betterment of manufacturing capabilities, increased competitiveness and profitability by adoption of cost reducing technology and business practices and decrease in the likelihood of domestic monopolies. Efficient deployment of productive resources - natural, human, industrial and financial resources ensures productivity gains.

Mercantilist argued that trade is a zero sum game. Mercantilism advocated maximizing exports in order to bring in more precious metals and minimizing imports through the state imposing very high tariffs on foreign goods. This view argues that trade is a 'zero-sum game', with winners who win does so only at the expense of losers and one country's gain is equal to another country's loss, so that the net change in wealth or benefits among the participants is zero.

- (c) Yes, Countries like India are unable to estimate their national income wholly by one method. There are various sectors in an economy and national income generated by these sectors is estimated by using different methods. For example, in agricultural sector, net value added is estimated by the production method, in small scale sector net value added is estimated by the income method and in the construction sector net value added is estimated by the expenditure method.
9. (a) Market power is an important factor that contributes to inefficiency because it results in higher prices than competitive prices. In addition, market power also tends to restrict output and leads to deadweight loss. Because of the social costs imposed by monopoly, governments intervene by establishing rules and regulations designed to promote competition and prohibit actions that are likely to restrain competition. These legislations differ from country to country. For example, in India, we have the Competition Act, 2002(as amended by the Competition (Amendment) Act, 2007) to promote and sustain competition in markets. Such legislations generally aim at prohibiting contracts, combinations and collusions among producers or traders which are in restraint of trade and other anticompetitive actions such as predatory pricing. On the contrary, some of the regulatory responses of government to incentive failure tend to create and protect monopoly positions of firms that have developed unique innovations. For example, patent and copyright laws grant exclusive rights of products or processes to provide incentives for invention and innovation. Policy options for limiting market power also include price regulation in the form of setting maximum prices that firms can charge. Price regulation is most often used for natural monopolies that can produce the entire output of the market at a cost that is lower than what it would be if there were several firms. If a firm is a natural monopoly, it is more efficient to permit it serve the entire market rather than have several firms who compete each other. Examples of such natural monopoly are electricity, gas and water supplies. In some cases, the government's regulatory agency determines an acceptable price, so as to ensure a competitive or fair rate of return. This practice is called rate-of-return regulation. Another approach to regulation is setting price-caps based on the firm's variable costs, past prices, and possible inflation and productivity growth.
- (b) The deposit expansion multiplier describes the amount of additional money created by commercial bank through the process of lending the available money it has in excess of the central bank's reserve requirements. The deposit expansion multiplier is, thus inextricably tied to the bank's reserve requirement. This measure tells us how much new money will be created by the banking system for a given increase in the high powered money. It reflects a bank's ability to increase the money supply. The deposit expansion multiplier is the reciprocal of the required reserve ratio.
- If reserve ratio is 20%, then credit multiplier = $1/0.20 = 5$.
- The deposit expansion multiplier = $1/\text{Required Reserve Ratio}$

(c) Given, MPC = 0.8

Planned to increase National Income by= Rs. 3000 Crore

$$K = \frac{1}{1 - MPC}$$

$$\frac{1}{1 - 0.8} = 5$$

$$\text{We also know } K = \frac{\Delta Y}{\Delta I}$$

$$\text{So } 5 = \frac{3000}{\Delta I}$$

$$\Delta I = 600 \text{ Crore.}$$

10. (a) The wide-reaching collection of markets and institutions that handle the exchange of foreign currencies is known as the foreign exchange market. Being an over-the-counter market, it is not a physical place; rather, it is an electronically linked network of big banks, dealers and foreign exchange brokers who bring buyers and sellers together.

The major participants in the exchange market are central banks, commercial banks, governments, foreign exchanged dealers, multinational corporations that engage in international trade and investments, non-bank financial institutions such as asset management firms, insurance companies, brokers, arbitrageurs and speculators. The central banks participate in the foreign exchange markets, not to make profit, but essentially to contain the volatility of exchange rate to avoid sudden and large appreciation or depreciation of domestic currency and to maintain stability in exchange rate in keeping with the requirements of national economy. If the domestic currency fluctuates excessively, it causes panic and uncertainty in the business world. Commercial banks participate in the foreign exchange market either on their own account or for their clients. When they trade on their own account, banks may operate either as speculators or arbitrageurs/ or both. The bulk of currency transactions occur in the inter-bank market in which the banks trade with each other. Foreign exchange brokers participate in the market as intermediaries between different dealers or banks. Arbitrageurs profit by discovering price differences between pairs of currencies with different dealers or banks. Speculators, who are bulls or bears, are deliberate risk-takers who participate in the market to make gains which result from unanticipated changes in exchange rates. Other participants in the exchange market are individuals who form only a very insignificant fraction in terms of volume and value of transactions.

- (b) The difference between the aggregate amount that a country's citizens and companies earn abroad, and the aggregate amount that foreign citizens and overseas companies earn in that country.

(c) Government spending multiplier = $\frac{1}{1 - MPC}$

$$\frac{1}{1 - 0.75} = \frac{1}{0.25} = 4$$

Net effect of Rs 100 crore spending is Rs. 100 crore * 4 = Rs. 400 crore

11. (a) (i) In an open economy, the main advantages of a fixed rate regime are, firstly, a fixed exchange rate avoids currency fluctuations and eliminates exchange rate risks and transaction costs that can impede international flow of trade and investments. A fixed exchange rate can thus greatly enhance international trade and investment. Secondly, a fixed exchange rate system imposes discipline on a country's monetary authority and therefore is more likely to generate lower levels of inflation. Thirdly, the government can encourage greater trade and investment as stability encourages investment. Fourthly, exchange rate peg can also enhance the credibility of the country's monetary policy. And lastly, in the fixed or managed floating (where the market forces are allowed to determine the exchange rate within a band) exchange rate regimes, the central bank is required to stand ready to intervene in the foreign exchange market and, also to maintain an adequate amount of foreign exchange reserves for this purpose.
- (ii) The autonomous expenditure multiplier in a four sector model includes the effects of foreign transactions and is stated as $\frac{1}{1-b+v}$ where v is the propensity to import which is greater than zero. The greater the value of v , the lower will be the autonomous expenditure multiplier.
- (b) (i) Non-discretionary fiscal policy or automatic stabilizers are part of the structure of the economy and are 'built-in' fiscal mechanisms that operate automatically to reduce the expansions and contractions of the business cycle. It occurs through automatic adjustments in government expenditures and taxes without any deliberate governmental action i.e. by limiting the increase in disposable income during an expansionary phase and limiting the decrease in disposable income during the contraction phase of the business cycle.
- (ii) The demand for money is a decision about how much of one's given stock of wealth should be held in the form of money rather than as other assets such as bonds. Demand for money is actually demand for liquidity and a demand to store value.

Or

Regional Trade Agreements (RTAs) are defined as grouping of countries, which are formed under the objective of reducing barriers to trade between member countries; not necessarily belonging to the same geographical region.