Test Series: May, 2020

MOCK TEST PAPER- 1

INTERMEDIATE (NEW): GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANICAL 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 data relating to two companies are as given below:

	Company A	Company B
Equity Capital	Rs.6,00,00,000	Rs.3,50,00,000
15% Debentures	Rs.40,00,000	Rs.65,00,000
Output (units) per annum	6,00,000	1,50,000
Selling price/ unit	Rs.60	Rs.500
Fixed Costs per annum	Rs.70,00,000	Rs.1,40,00,000
Variable Cost per unit	Rs.30	Rs.275

You are required to CALCULATE the Operating leverage, Financial leverage and Combined leverage of the two Companies.

(b) ABC Limited has the following book value capital structure:

Equity Share Capital (1 crore shares @ Rs.10 each)	Rs.1,000 lakh
Reserves and Surplus	Rs.2,250 lakh
9% Preference Share Capital (5 lakh shares @ Rs.100 each)	Rs.500 lakh
8.5% Debentures (1.5 lakh debentures @ Rs.1,000 each)	Rs.1,500 lakh
12% Term Loans from Financial Institutions	Rs.500 lakh

- The debentures of ABC Limited are redeemable at par after five years and are quoting at Rs.985 per debenture.
- The current market price per equity share is Rs.60. The prevailing default-risk free interest rate on 10-year GOI Treasury Bonds is 5.5%. The average market risk premium is 7%. The beta of the company is 1.85
- The preference shares of the company are redeemable at 10% premium after 5 years is currently selling at Rs.102 per share.

The applicable income tax rate for the company is 35%.

Required:

CALCULATE weighted average cost of capital of the company using market value weights.

(c) A company proposes to install a machine involving a Capital Cost of Rs.72,00,000. The life of the machine is 5 years and its salvage value at the end of the life is nil. The machine will produce the net operating income after depreciation of Rs.13,60,000 per annum. The Company's tax rate is 35%.

The Net Present Value factors for 5 years are as under:

Discounting Rate	:	14	15	16	17	18	19
Cumulative factor	:	3.43	3.35	3.27	3.20	3.13	3.06

You are required to COMPUTE the internal rate of return (IRR) of the proposal.

(d) A&R Ltd. is an all equity financed company with a market value of Rs.25,000 lakh and cost of equity (K_e) 18%. The company wants to buyback equity shares worth Rs.5,000 lakh by issuing and raising 10% debentures redeemable at 10% premium after 5 years. Rate of tax may be taken as 35%. Applying Modigliani-Miller (MM) (with taxes), you are required to CALCULATE after restructuring:

(i) Market value of A&R Ltd.

(ii) Cost of Equity (K_e)

(iii) Weighted average cost of capital (using market weights). **[4 × 5 Marks = 20 Marks]**

2. ZX Ltd. has a paid-up share capital of Rs.1,00,00,000, face value of Rs.100 each. The current market price of the shares is Rs.100 each. The Board of Directors of the company has an agenda of meeting to pay a dividend of 50% to its shareholders. The company expects a net income of Rs.75,00,000 at the end of the current financial year. Company also plans for a capital expenditure for the next financial year for a cost of Rs.95,00,000, which can be financed through retained earnings and issue of new equity shares.

Company's desired rate of investment is 15%.

Required:

Following the Modigliani- Miller (MM) Hypothesis, DETERMINE value of the company when:

(i) It does not pay dividend and

(ii) It does pay dividend **[10 Marks]**

3. A&R Ltd. has undertaken a project which has an initial investment of Rs.2,000 lakhs in plant & machinery and Rs.800 lakhs for working capital. The plant & machinery would have a salvage value of Rs. 474.61 lakhs at the end of the fifth year. The plant & machinery would depreciate at the rate of 25% p.a. on WDV method. The other details of the project for the five year period are as follows:

Sales	10,00,000 units p.a.
Selling price per unit	Rs.500
Variable cost	50% of selling price
Fixed overheads (excluding depreciation)	Rs.300 lakh p.a.
Corporate tax rate	35%
Rate of interest on bank loan	12%
After tax required rate of return	15%

Required:

(i) CACULATE net present value (NPV) of the project and DETERMINE the viability of the project.

(ii) DETERMINE the sensitivity of project's NPV under each of the following condition:

a. Decrease in selling price by 10%;

b. Increase in cost of plant & machinery by 10%.

PV factor	Year-1	Year-2	Year-3	Year-4	Year-5
12%	0.892	0.797	0.711	0.635	0.567
15%	0.869	0.756	0.657	0.571	0.497

[10 Marks]

4. The following accounting information and financial ratios of A&R Limited relate to the year ended 31st March, 2020:

Inventory Turnover Ratio	6 Times
Creditors Turnover Ratio	10 Times
Debtors Turnover Ratio	8 Times
Current Ratio	2.4
Gross Profit Ratio	25%

Total sales Rs.6,00,00,000; cash sales 25% of credit sales; cash purchases Rs.46,00,000; working capital Rs.56,00,000; closing inventory is Rs.16,00,000 more than opening inventory.

You are required to CALCULATE:

(i) Average Inventory

(ii) Purchases

(iii) Average Debtors

(iv) Average Creditors

(v) Average Payment Period

(vi) Average Collection Period

(vii) Current Assets

(viii) Current Liabilities.

Take 365 days a year **[10 Marks]**

5. (a) Cost sheet of A&R Ltd. provides the following particulars:

	Amount per unit (Rs.)
Raw materials cost	200.00
Direct labour cost	75.00
Overheads cost	150.00
Total cost	425.00
Profit	75.00
Selling Price	500.00

The Company keeps raw material in stock, on an average for four weeks; work-in-progress, on an average for one week; and finished goods in stock, on an average for two weeks.

The credit allowed by suppliers is three weeks and company allows four weeks credit to its debtors. The lag in payment of wages is one week and lag in payment of overhead expenses is two weeks.

The Company sells one-fifth of the output against cash and maintains cash-in-hand and at bank put together at Rs.2,50,000.

Required:

PREPARE a statement showing estimate of Working Capital needed to finance an activity level of 2,60,000 units of production. Assume that production is carried on evenly throughout the year, and wages and overheads accrue similarly. Work-in-progress stock is 80% complete in all respects.

(b) The following information is provided by the P Ltd. for the year ending 31st March, 2020.

Raw Material storage period	52 days
Work in progress conversion period	18 days
Finished Goods storage period	20 days
Debt Collection period	75 days
Creditors' payment period	25 days
Annual Operating Cost	45 crore

(Including depreciation of Rs.42,00,000)

(1 year = 360 days)

You are required to CALCULATE Operating Cycle period and Number of Operating Cycles in a year. **[8 + 2 = 10 Marks]**

6. Answer the followings:

(a) EXPLAIN in brief the Pecking order theory.

(b) EXPLAIN Over-capitalisation. STATE its causes and consequences.

(c) EXPLAIN in short the term Letter of Credit.

OR

"Financing a business through borrowing is cheaper than using equity." Briefly EXPLAIN.

[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.

QUESTIONS

7. (a) How are the following transactions treated in national income calculation? What is the rationale in each case?

(i) Electricity sold to a steel plant

(ii) Electric power sold to a consumer household

(iii) A car manufacturer procuring parts and components from the market **(3 Marks)**

(b) What do you mean by price ceiling? Explain it with the help of examples. **(2 Marks)**

(c) How the following affect money multiplier and money supply?

(i) Banks open large number ATMs all over the country.

(ii) If banks decide to keep 100% reserves. **(3 Marks)**

(d) How does trade increase economic efficiency? **(2 Marks)**

8. (a) Examine the situation if aggregate expenditures exceeds the economy's production capacity. **(2 Marks)**

(b) How do the markets fail in an economy? What are the main reasons behind this market failure and economic inefficiency? **(3 Marks)**

(c) Explain operating procedures in the context of monetary policy of India? **(2 Marks)**

(d) How does Escalated tariff structure work and discriminated ? **(3 Marks)**

9. (a) Fiscal policy achieve social justice and equity. Comment on this with the help of examples. **(5 Marks)**

(b) What does the reserve money determine? Compute Reserve Money from the following data -

Particulars	**Rs. in Crore**
Currency in circulation	14903.90
RBI's net non-monetary liabilities	4945.80

Banker's deposits with RBI	5780.60	
Other deposits with RBI	317.20	
Long term deposits of residents	321.10	**(3 Marks)**

(c) What are the major functions of the WTO? **(2 Marks)**

10. (a) An increase in investment by Rs. 700 crore leads to increase in national income by Rs 3,500 crore. Calculate marginal propensity to consume and change in saving. **(3 Marks)**

(b) What effect does government expenditure have on money supply? **(2 Marks)**

(c) Define tariff and what are its effects on the importing and exporting countries? **(5 Marks)**

11. (a) Calculate the GNP at market price using value added method with the help of following data –

Particulars	Rs. in crore
Value of output in primary sector	1000
Net factor income from abroad	-20
Value of output in tertiary sector	700
Intermediate consumption in secondary sector	400
Value of output in secondary sector	900
Government transfer payments	600
Intermediate consumption in primary sector	500
Intermediate consumption in tertiary sector	400

(5 Marks)

(b) What do you mean by common pool resources and why producers and consumers do not pay for these resources? **(3 Marks)**

(c) What role does Market Stabilisation Scheme (MSS) play in our economy? **(2 Marks)**

OR

What is meant by import quotas? **(2 Marks)**

MOCK TEST PAPER- 1

INTERMEDIATE (NEW): GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANICAL MANAGEMENT

Suggested Answers/ Hints

1. (a) Computation of Operating leverage, Financial leverage and Combined leverage of two companies

	Company A	Company B
Output units per annum	6,00,000	1,50,000
	(Rs.)	(Rs.)
Selling price / unit	60	500
Sales revenue	3,60,00,000 (6,00,000 units × Rs.60)	7,50,00,000 (1,50,000 units × Rs.500)
Less: Variable costs	1,80,00,000 (6,00,000 units × Rs.30)	4,12,50,000 (1,50,000 units × Rs.275)
Contribution (C)	1,80,00,000	3,37,50,000
Less: Fixed costs	70,00,000	1,40,00,000
EBIT (Earnings before Interest and tax)	1,10,00,000	1,97,50,000
Less: Interest @ 15% on debentures	6,00,000	9,75,000
PBT	1,04,00,000	1,87,75,000

Operating Leverage = $\frac{\text{Contribution}}{\text{EBIT}}$	1.64 (Rs.1,80,00,000 ÷ 1,10,00,000)	1.71 (Rs.3,37,50,000 ÷ Rs. 1,97,50,000)
Financial Leverage = $\frac{\text{EBIT}}{\text{PBT}}$	1.06 (Rs.1,10,00,000 ÷ Rs.1,04,00,000)	1.05 (Rs.1,97,50,000 ÷ Rs. 1,87,75,000)
Combined Leverage = DOL × DFL	1.74 (1.64 × 1.06)	1.80 (1.71 × 1.05)

(b) Working Notes:

(1) Computation of cost of debentures (K_d) :

$$K_d = \frac{Rs.85(1-0.35)+\frac{(1,000-985)}{5}}{\frac{(1,000+985)}{2}} = \frac{55.25+3}{992.5} = 0.0586 \text{ or } 5.86\%$$

(2) Computation of cost of term loans (K_T) :

$= r(1-t)$

$= 0.12(1-0.35) = 0.078$ or 7.8%

(3) Computation of cost of preference capital (K_P) :

$$K_p = \frac{\text{Preference Dividend} + (RV - NP)/n}{(RV + NP)/2}$$

$$= \frac{Rs.9 + \frac{(110-102)}{5}}{\frac{(110+102)}{2}} = \frac{9+1.6}{106} = 0.1 \text{ or } 10\%$$

(4) Computation of cost of equity (K_e) :

$= R_f + ß(R_m - R_f)$

Or, = Risk free rate + (Beta × Risk premium)

$= 0.055 + (1.85 \times 0.07)$ = 0.1845 or 18.45%

Calculation of Weighted Average cost of capital Using market value weights

Source of Capital	Market value of capital structure (Rs. in lakh)	Weights	After tax cost of capital (%)	WACC (%)
Equity share capital (1 crore shares × Rs.60)	6,000	0.71	18.45	13.09
9% Preference share capital (5 lakh shares × Rs.102)	510	0.06	10.00	0.60
8.5 % Debentures (1.5 lakh × Rs.985)	1,477.5	0.17	5.86	0.99
12% Term loans	500	0.06	7.80	0.47
	8,487.50	1.000		15.15

(c)

Computation of cash inflow per annum	Rs.
Net operating income per annum	13,60,000
Less: Tax @ 35%	4,76,000
Profit after tax	8,84,000
Add: Depreciation (Rs.72,00,000 / 5 years)	14,40,000
Cash inflow	23,24,000

The IRR of the investment can be found as follows:

NPV = – Rs. 72,00,000 + Rs. 23,24,000 ($PVAF_5$, r) = 0

or PVA F_5 r (Cumulative factor) = $\frac{Rs.72,00,000}{Rs.23,24,000}$ = 3.09

Computation of Internal Rate of Return (IRR)

Discounting rate	15%	19%
Cumulative factor	3.35	3.06
Total NPV (Rs.)	77,85,400	71,11,440

	(Rs.23,24,000 × 3.35)	(Rs.23,24,000 × 3.06)
Internal outlay (Rs.)	72,00,000	72,00,000
Surplus (Deficit) (Rs.)	5,85,400	(88,560)

$$IRR = LR + \frac{NPV \text{ at } LR}{NPV \text{ at } LR - NPV \text{ at } HR} \times (HR - LR)$$

$$= 15\% + \frac{5,85,400}{5,85,400 - (-88,560)} \times (19\% - 15\%)$$

$$= 15\% + 3.47 = 18.47\%$$

(d) Value of a company (V) = Value of equity (S) + Value of debt (D)

A&R Ltd. is all equity financed company, its value would equal to value of equity.

$$\text{Market value of equity} = = \frac{\text{Net Income (NI)}}{K_e}$$

In the question, market value of equity is Rs.25,000 lakh and cost of equity (K_e) is 18%. The Net Income (NI) is calculated as follows:

$$\frac{\text{Net income (NI) for equity - holders}}{K_e} = \text{Market Value of Equity}$$

$$\frac{\text{Net income (NI) for equity holders}}{0.18} = 25,000 \text{ lakh}$$

Net income for equity holders = 4,500 lakh

Net Income (NI) is after tax income, the before tax income would be

$$EBT = \frac{4,500 \text{ lakh}}{(1 - 0.35)} = 6,923.07 \text{ lakh.}$$

Since, A&R Ltd. is an all equity financed and there is no interest expense, so here EBT is equal to EBIT.

After issuing 10% debentures, the A&R Ltd would become a levered company.

(i) The value of A&R Ltd. after issuing debentures would be calculated as follows:

Value of a levered company (V_g)

= Value of an unlevered company (V_u) + Tax benefit (TB)

= Rs.25,000 lakh + (Rs.5,000 lakh × 35%)

= Rs.25,000 + Rs.1,750 = Rs.26,750

(ii) Cost of Equity (K_e)

Total Value = Rs.26,750 lakh

Less: Value of Debt = Rs. 5,000 lakh

Value of Equity = Rs. 21,750

$$K_e = \frac{4,175 \text{ lakh}}{21,750 \text{ lakh}} = 0.1919 = 19.19\%$$

(iii) WACC (on market value weight)

Components of Costs	Amount (lakh)	Cost of Capital (%)	Weight	WACC (%)
Equity	21,750	19.19	0.81	15.54
Debt	5,000	8.10	0.19	1.54
	26,750			17.08

Workings Note:

1. **(Rs. in lakh)**

	All Equity	Debt and Equity
EBIT (as calculated above)	6,923.07	6,923.07
Interest to debt-holders	-	500.00
EBT	6,923.07	6,423.07
Taxes (35%)	2,423.07	2,248.07
Income available to equity shareholders	4,500.00	4,175.00
Income to debt holders plus income available to shareholders	4,500.00	4,675.00

2. **Cost of Debenture (K_d)** $= \dfrac{Rs.500(1-0.35)+\dfrac{(5,500-5,000)}{5}}{\dfrac{(5,500+5,000)}{2}}$

$$= \frac{Rs.325+100}{5,250} = 0.081 \text{ or } 8.1\%$$

2. As per MM Hypothesis, value of firm/ company is calculated as below:

$$V_f \text{ or } nP_0 = \frac{(n+\Delta n)P_1 - I + E}{(1+K_e)}$$

Where,

V_f = Value of firm in the beginning of the period

n = number of shares in the beginning of the period

Δn = number of shares issued to raise the funds required

I = Amount required for investment

E = total earnings during the period

(i) Value of the ZX Ltd. when dividends are not paid.

$$nP_o = \frac{(n+\Delta n)P_1 - I + E}{1+K_e}$$

$$nP_0 = \frac{\left(1,00,000+\dfrac{20,00,000}{115}\right)\times Rs.115 - Rs.95,00,000 + Rs.75,00,000}{(1+0.15)}$$

$$= \frac{Rs.1,35,00,000 - Rs.95,00,000 + Rs.75,00,000}{(1+0.15)} = Rs.1,00,00,000$$

Working notes:

1. Price of share at the end of the period (P_1)

$$P_o = \frac{P_1 + D_1}{1 + K_e}$$

$$100 = \frac{P_1 + 0}{1 + 0.15} \quad \text{or,} \quad P_1 = 115$$

2. Calculation of funds required for investment

Earnings	Rs.75,00,000
Dividend distributed	Nil
Fund available for investment	Rs.75,00,000
Total Investment	Rs.95,00,000
Balance Funds required	Rs.20,00,000

3. Calculation of no. of shares required to be issued for balance fund

$$\text{No. of shares } (\Delta n) = \frac{\text{Funds required}}{\text{Price at end } (P_1)} = \frac{20,00,000}{115} \text{ shares}$$

(ii) Value of the ZX Ltd. when dividends are paid.

$$nP_o = \frac{(n + \Delta n)P_1 - I + E}{1 + K_e}$$

$$nP_0 = \frac{\left(1,00,000 + \frac{70,00,000}{65}\right) \times Rs.65 - Rs.95,00,000 + Rs.75,00,000}{(1 + 0.15)}$$

$$= \frac{Rs.1,35,00,000 - Rs.95,00,000 + Rs.75,00,000}{(1 + 0.15)} = Rs.1,00,00,000$$

Working notes:

4. Price of share at the end of the period (P_1)

$$P_o = \frac{P_1 + D_1}{1 + K_e}$$

$$100 = \frac{P_1 + 50}{1 + 0.15} \quad \text{or,} \quad P_1 = Rs.65$$

5. Calculation of funds required for investment

Earnings	Rs.75,00,000
Dividend distributed	Rs.50,00,000
Fund available for investment	Rs.25,00,000
Total Investment	Rs.95,00,000
Balance Funds required	Rs.70,00,000

6. Calculation of no. of shares required to be issued for balance fund

$$\text{No. of shares } (\Delta n) = \frac{\text{Funds required}}{\text{Price at end } (P_1)} = \frac{70,00,000}{65} = 1,07,693 \text{ shares(approx.)}$$

Note- *As per MM-hypothesis of dividend irrelevance, value of firm remains same irrespective of dividend paid. In the solution, there may be variation in value, which is due to rounding off error.*

3. (i) Calculation of Net Present Value (NPV):

	Year-1	Year-2	Year-3	Year-4	Year-5
Sales volume (Qty. in lakh)	10	10	10	10	10
Contribution per unit (Rs.) (Selling price – variable cost)	250	250	250	250	250
Total contribution (Rs.in lakh)	2,500	2,500	2,500	2,500	2,500
Less: Fixed overheads (Rs. In lakh)	300	300	300	300	300
PBDT	2,200	2,200	2,200	2,200	2,200
Less: Depreciation (Rs. in lakh) (Working note-1)	500	375	281.25	210.94	158.20
PBT	1,700	1,825	1,918.75	1,989.06	2,041.80
Less: Tax @ 35%	595	638.75	671.56	696.17	714.63
PAT	1,105	1,186.25	1,247.19	1,292.89	1,327.17
Add: Depreciation	500	375	281.25	210.94	158.20
Add: Salvage value of plant & machinery	-	-	-	-	474.61
Add: Working capital	-	-	-	-	800
Net Cash inflow	1,605	1,561.25	1,528.44	1,503.83	2,759.98
P.V factor @15%	0.869	0.756	0.657	0.571	0.497
P.V of cash inflows	1,394.74	1,180.31	1,004.18	858.68	1,371.71

Net Present Value = P.V of cash inflows – P.V of cash outflows

= Rs. (1,394.74+1,180.31+1,004.18+858.68+1,371.71) – (Rs.2,000 + Rs. 800)

= Rs.3,009.62 lakh

The NPV of the project is positive, hence, the project is viable.

Working note-1:

	Year-1	Year-2	Year-3	Year-4	Year-5
Opening balance	2,000	1,500	1,125	843.75	632.81
Depreciation @25%	500	375	281.25	210.94	158.20
Closing WDV	1,500	1,125	843.75	632.81	474.61

(ii) Determination of sensitivity of NPV w.r.t.

a. Decrease in selling price by 10%

	Year-1	Year-2	Year-3	Year-4	Year-5
Sales volume (Qty. in lakh)	10	10	10	10	10
New Selling price	450	450	450	450	450
Variable cost	250	250	250	250	250
Contribution per unit (Rs.) (Selling price – variable cost)	200	200	200	200	200
Total contribution (Rs.in lakh)	2,000	2,000	2,000	2,000	2,000
Less: Fixed overheads (Rs. In lakh)	300	300	300	300	300
PBDT	1,700	1,700	1,700	1,700	1,700
Less: Depreciation (Rs. in lakh) (Working note-1)	500	375	281.25	210.94	158.20
PBT	1,200	1,325	1,418.75	1,489.06	1,541.80
Less: Tax @ 35%	420	463.75	496.56	521.17	539.63
PAT	780	861.25	922.19	967.89	1,002.17
Add: Depreciation	500	375	281.25	210.94	158.20
Add: Salvage value of plant & machinery	-	-	-	-	474.61
Add: Working capital	-	-	-	-	800
Net Cash inflow	1,280	1,236.25	1,203.44	1,178.83	2,434.98
P.V factor @15%	0.869	0.756	0.657	0.571	0.497
P.V of cash inflows	1,112.32	934.61	790.66	673.11	1,210.18

NPV = Rs. (1,112.32+934.61+790.66+673.11+1,210.18) – (Rs. 2,000 + Rs. 800)

= Rs. 4,720.88 – Rs. 2,800 = 1,920.88 lakh

10% reduction in selling price reduces the NPV by 36.18% (3,009.62-1,920.88/3,009.62)

b. Increase in project cost by 10%

	Year-1	Year-2	Year-3	Year-4	Year-5
PBDT	2,200	2,200	2,200	2,200	2,200
Less: Depreciation (Rs. in lakh) (Working note-2)	550	412.5	309.37	232.03	174.03
PBT	1,650	1,787.50	1,890.63	1,967.97	2,025.97
Less: Tax @ 35%	577.50	625.63	661.72	688.79	709.09
PAT	1072.50	1,161.87	1,228.91	1,279.18	1,316.88
Add: Depreciation	550	412.5	309.37	232.03	174.03
Add: Salvage value of plant & machinery	-	-	-	-	474.61
Add: Working capital	-	-	-	-	800
Net Cash inflow	1,622.50	1,574.37	1,538.28	1,511.21	2,765.52

P.V factor @15%	0.869	0.756	0.657	0.571	0.497
P.V of cash inflows	1,409.95	1,190.22	1,010.65	862.90	1,374.46

NPV = Rs. (1,409.95+1,190.22+1,010.65+862.90+1,374.46) – (Rs. 2,200 + Rs. 800)

= Rs. 5,848.18 – Rs. 3,000 = 2,848.18 lakh

10% increase in project cost reduces the NPV only by 5.36% (3,009.62 - 2,848.18/3,009.62)

Working note-2:

	Year-1	Year-2	Year-3	Year-4	Year-5
Opening balance	2,200	1,650	1,237.50	928.13	696.10
Depreciation @25%	550	412.5	309.37	232.03	174.03
Closing WDV	1,650	1,237.50	928.13	696.10	522.07

4. (i) Computation of Average Inventory

Gross Profit = 25% of Rs.6,00,00,000 = Rs.1,50,00,000

Cost of goods sold (COGS) = Sales - Gross Profit

= Rs.6,00,00,000 – Rs.1,50,00,000

= Rs.4,50,00,000

$$\text{Inventory Turnover Ratio} = \frac{\text{COGS}}{\text{Average Inventory}}$$

$$6 = \frac{\text{Rs.4,50,00,000}}{\text{Average inventory}}$$

Average inventory = Rs.75,00,000

(ii) Computation of Purchases

Purchases = COGS + (Closing Stock – Opening Stock)

= Rs.4,50,00,000 + 16,00,000*

Purchases = Rs.4,66,00,000

* Increase in Stock = Closing Stock – Opening Stock = Rs.16,00,000

(iii) Computation of Average Debtors

Let Credit Sales be Rs.100, Cash sales = $\frac{25}{100} \times 100$ = Rs.25

Total Sales = 100 + 25= Rs.125

Total sales is Rs.125 credit sales is Rs.100

If total sales is Rs.6,00,00,000, then credit sales is = $\frac{\text{Rs. } 6,00,00,000 \times 100}{125}$

Credit Sales = Rs.4,80,00,000

Cash Sales = (Rs.6,00,00,000 – Rs.4,80,00,000) = Rs.1,20,00,000

Debtors Turnover Ratio = $\frac{\text{Net Credit Sales}}{\text{Average debtors}}$ = 8

= $\frac{\text{Rs.4,80,00,000}}{\text{Average debtors}}$ = 8

Average Debtors = $\frac{\text{Rs.4,80,00,000}}{8}$

Average Debtors = Rs.60,00,000

(iv) Computation of Average Creditors

Credit Purchases = Purchases – Cash Purchases

= Rs.4,66,00,000 – Rs.46,00,000 = Rs.4,20,00,000

Creditors Turnover Ratio = $\frac{\text{Credit Purchases}}{\text{Average Creditors}}$

10 = $\frac{\text{Rs.4,20,00,000}}{\text{Average Creditors}}$

Average Creditors = Rs.42,00,000

(v) Computation of Average Payment Period

Average Payment Period = $\frac{\text{Average Creditors}}{\text{Average Daily Credit Purchases}}$

= $\frac{\text{Rs. 42,00,000}}{\left(\frac{\text{Credit Purchases}}{365}\right)}$ = $\frac{\text{Rs. 42,00,000}}{\left(\frac{\text{Rs. 4,20,00,000}}{365}\right)}$

= $\frac{\text{Rs.42,00,000}}{\text{Rs.4,20,00,000}}$ × 365 = 36.5 days

Alternatively

Average Payment Period = 365/Creditors Turnover Ratio

= $\frac{365}{10}$ = 36.5 days

(vi) Computation of Average Collection Period

Average Collection Period = $\frac{\text{Average Debtors}}{\text{Net Credit Sales}}$ × 365

= $\frac{\text{Rs.60,00,000}}{\text{Rs.4,80,00,000}}$ × 365 = 45.625 days

Alternatively

Average collection period = $\frac{365}{\text{Debtors Turnover Ratio}}$

= $\frac{365}{8}$ = 45.625 days

(vii) Computation of Current Assets

$$\text{Current Ratio} = \frac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}} = 2.4$$

2.4 Current Liabilities = Current Assets

$$\text{or CL} = \frac{CA}{2.4}$$

Further, Working capital = Current Assets – Current liabilities

$$\text{So, Rs.56,00,000} = CA - \frac{CA}{2.4}$$

$$\text{Rs.56,00,000} = \frac{1.4CA}{2.4} \text{ Or, } 1.4\ CA = \text{Rs.1,34,40,000}$$

CA = Rs.96,00,000

(viii) Computation of Current Liabilities

$$\text{Current liabilities} = \frac{\text{Rs.96,00,000}}{2.4} = \text{Rs.40,00,000}$$

5. (a) Statement showing Estimate of Working Capital Needs

	(Amount in Rs.)	(Amount in Rs.)
A. Current Assets		
(i) Inventories:		
Raw material (4 weeks) $\left(\frac{2,60,000\text{ units} \times \text{Rs.}200}{52\text{ weeks}} \times 4\text{ weeks}\right)$	40,00,000	
WIP Inventory (1 week) $\left(\frac{2,60,000\text{ units} \times \text{Rs.}425}{52\text{ weeks}} \times 1\text{ week}\right) \times 0.8$	17,00,000	
Finished goods inventory (2 weeks) $\left(\frac{2,60,000\text{ units} \times \text{Rs.}425}{52\text{ weeks}} \times 2\text{ weeks}\right)$	42,50,000	99,50,000
(ii) Receivables (Debtors) (4 weeks) $\left(\frac{2,60,000\text{ units} \times \text{Rs.}425}{52\text{ weeks}} \times 4\text{ weeks}\right) \times \frac{4}{5_{th}}$		68,00,000
(iii) Cash and bank balance		2,50,000
Total Current Assets		1,70,00,000
B. Current Liabilities:		
(i) Payables (Creditors) for materials (3 weeks) $\left(\frac{2,60,000\text{ units} \times \text{Rs.}200}{52\text{ weeks}} \times 3\text{ weeks}\right)$		30,00,000

(ii) Outstanding wages (1 week) $\left(\frac{2,60,000\,\text{units} \times \text{Rs.}75}{52\,\text{weeks}} \times 1\,\text{week}\right)$		3,75,000
(iii) Outstanding overheads (2 weeks) $\left(\frac{2,60,000\,\text{units} \times \text{Rs.}150}{52\,\text{weeks}} \times 2\,\text{weeks}\right)$		15,00,000
Total Current Liabilities		48,75,000
Net Working Capital Needs (A – B)		1,21,25,000

(b) Calculation of Operating Cycle Period and number of Operating Cycle in a Year

Operating Cycle Period = R + W + F + D – C

= 52 + 18 + 20 + 75 – 25 = 140 days

Number of Operating Cycle in a Year = $\frac{360}{\text{Operating Cycle Period}}$

= 360/140 = 2.57 times

6. (a) This theory states that firms prefer to issue debt when they are positive about future earnings. Equity is issued when they are doubtful and internal finance is insufficient.

The pecking order theory argues that the capital structure decision is affected by manager's choice of a source of capital that gives higher priority to sources that reveal the least amount of information.

Pecking order theory suggests that managers may use various sources for raising of fund in the following order.

1. Managers first choice is to use internal finance
2. In absence of internal finance they can use secured debt, unsecured debt, hybrid debt etc.
3. Managers may issue new equity shares as a last option.

So briefly under this theory rules are

Rule 1: Use internal financing first.

Rule 2: Issue debt next

Rule 3: Issue of new equity shares at last

(b) Over-capitalization and its Causes and Consequences

It is a situation where a firm has more capital than it needs or in other words assets are worth less than its issued share capital, and earnings are insufficient to pay dividend and interest.

Causes of Over Capitalization

Over-capitalisation arises due to following reasons:

(i) Raising more money through issue of shares or debentures than company can employ profitably.

(ii) Borrowing huge amount at higher rate than rate at which company can earn.

(iii) Excessive payment for the acquisition of fictitious assets such as goodwill etc.

(iv) Improper provision for depreciation, replacement of assets and distribution of dividends at a higher rate.

(v) Wrong estimation of earnings and capitalization.

Consequences of Over-Capitalisation

Over-capitalisation results in the following consequences:

(i) Considerable reduction in the rate of dividend and interest payments.

(ii) Reduction in the market price of shares.

(iii) Resorting to "window dressing".

(iv) Some companies may opt for reorganization. However, sometimes the matter gets worse and the company may go into liquidation.

(c) Letter of Credit: It is an arrangement by which the issuing bank on the instructions of a customer or on its own behalf undertakes to pay or accept or negotiate or authorizes another bank to do so against stipulated documents subject to compliance with specified terms and conditions.

Or

"Financing a business through borrowing is cheaper than using equity"

(i) Debt capital is cheaper than equity capital from the point of its cost and interest being deductible for income tax purpose, whereas no such deduction is allowed for dividends.

(ii) Issue of new equity dilutes existing control pattern while borrowing does not result in dilution of control.

(iii) In a period of rising prices, borrowing is advantageous. The fixed monetary outgo decreases in real terms as the price level increases.

PAPER 8B: ECONOMICS FOR FINANCE

ANSWERS / HINTS

7. (a) (i) Being an intermediate good, electricity sold to a steel plant will not be included in national income calculation. The underlying principle is that only finished goods and services which are directly sold to the consumer for final consumption would be included. The value of the final output, namely steel, includes the value of electricity used up in the production process. Counting electricity sold to a steel plant separately will lead to the error of double counting and exaggerate the value of steel production.

(ii) Electric power sold to a consumer household would be included in the calculation of GDP since it is a final good consumed by the end user. Electric power sold to a consumer does not require any further processing and does not undergo any further transformation before use. Once a final good has been sold, it passes out of the active economic flow.

(iii) The value of parts and components procured from the market by a car manufacturer will not be included in national income calculation because these are intermediate goods used in car production. Value is added to the parts and components through the process of production and the same is resold. The value of the final output, namely car, includes the value of the parts and components. Counting parts and components separately will lead to the error of double counting and exaggerate the value of car production.

(b) Price ceiling is a government intervention in regulated market economies wherein an upper limit is set on the price charged for a product or service and the sellers are bound to abide by such limits. The objective is to influence the outcomes of a market on the grounds of fairness and equity. When prices of certain essential commodities rise excessively, government may resort to controls in the form of price ceilings (also called maximum price) for making a resource or commodity available to all at reasonable prices. For example: maximum prices of food grains and essential items are set by government during times of scarcity. A price ceiling which is set below the prevailing market clearing price will generate excess demand over supply.

(c) (i) ATMs let people to withdraw cash from the bank as and when needed, reduces cost of conversion of deposits to cash and makes deposits relatively more convenient. People hold less cash and more deposits, thus reducing the currency-deposit ratio; increasing the money multiplier causing the money supply to increase.

(ii) If banks decides to keep 100% reserves, then the Money multiplier = 1/required reserve ratio = 1/100% = 1. Deposits simply substitute for the currency that is held by banks as reserves and therefore no new money is created by banks.

(d) 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.

8. (a) Aggregate expenditure or Aggregate demand is the sum of all Planned expenditures for the entire economy. When aggregate expenditure exceeds an economy's production capacity at full employment level, the resulting strain on resources creates demand - pull inflation or higher price level. Nominal output will increase, but it merely reflects higher prices, rather than additional real output.

(b) Market fails in an economy when the free market leads to misallocation of society's scarce resources or in other words, there is either overproduction or underproduction of particular goods and services leading to a less than optimal outcome.

The four main reasons for market failure are: market power, externalities, public goods, and incomplete information.

Excessive market power causes single producer or small number of producers to produce and sell less output than would be produced and charge a higher price.

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

Public goods, due to their special characteristics such as non-excludability and non-rivalry, are not produced at all or produced less than optimal quantities. These have Free rider problem causing over-use, degradation and depletion of common resources resulting in market failure.

Information failure manifests in *asymmetric information causing adverse selection and moral hazard.*

(c) Operating procedures are the variety of rules, traditions and practices used in the actual implementation of monetary policy. It encompasses, basically, a set of tactics such as choice of the operating target and policy instruments, the nature and frequency of use of policy instruments, market interventions, the width of corridor for market interest rates and the manner of policy signals to effect desired changes in the intermediate targets.

(d) Escalated Tariff structure refers to the system wherein the nominal tariff rates on imports of manufactured goods are higher than the nominal tariff rates on intermediate inputs and raw materials, i.e the tariff on a product increases as that product moves through the value-added chain. For example a four percent tariff on iron ore or iron ingots and twelve percent tariff on steel pipes. This type of tariff is discriminatory as it protects manufacturing industries in importing countries and dampens the attempts of developing manufacturing industries of exporting countries. This has special relevance to trade between developed countries and developing countries. Developing countries are thus forced to continue to be suppliers of raw materials without much value addition.

9. (a) 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. Following are few measures to achieve desired distributional effects.

- A progressive direct tax system 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.
- 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 under which people are entitled to old-age pensions, 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.

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 of the nation.

(b) The Reserve money determines the level of liquidity and price level in the economy. It is calculated by the following formula-

Reserve Money = Currency in circulation + Bankers' deposits with the RBI + Other deposits with the RBI

= 14903.90 + 5780.60 + 317.20 = 21001.7 Crore

(c) The principal objective of the WTO is to facilitate the flow of international trade smoothly, freely, fairly and predictably. The WTO does its functions by acting as a forum for trade negotiations among member governments, administering trade agreements, reviewing national trade policies, assisting developing countries in trade policy issues, through technical assistance and training programmes and cooperating with other international organizations.

10. (a) Increase in investment (Δ I) = Rs 700 crore

Increase in national income (ΔY)= Rs.3,500 crore

Multiplier (K) = $\frac{\Delta Y}{\Delta I}$

K = 3500/ 700 = 5

We know, K = $\frac{1}{1-MPC}$

1 – MPC = $\frac{1}{5}$

1 – MPC = 0.2

MPC = 1 – 0.2

MPC = 0.8

We also know, MPC + MPS = 1

Or, MPS = 1– MPC

= 1 – 0.8

= 0.2

Change in saving (ΔS) = $\Delta Y \times$ MPS

= 3,500 crore $\times$ 0.2

= 700 crore

(b) Whenever the central and the state governments' cash balances fall short of the minimum requirement, they are eligible to avail a facility called Ways and Means Advances (WMA)/overdraft (OD) facility. When the Reserve Bank lends to the governments under Ways and Means Advances (WMA)/overdraft (OD) , it results in the generation of excess reserves (*i.e.*, excess balances of commercial banks with the Reserve Bank). The excess reserves thus created can potentially lead to an increase in money supply through the money multiplier process.

(c) Tariff is defined as a financial charge in the form of a tax, imposed at the border on goods going from one customs territory to another. Tariffs are the most visible and universally used trade measures. Tariffs are aimed at altering the relative prices of goods and services imported, so as to contract the domestic demand and thus regulate the volume of their imports. Tariffs leave the world market price of the goods unaffected; while raising their prices in the domestic market. The main goals of tariffs are to raise revenue for the government, and more importantly to protect the domestic import-competing industries.

A tariff levied on an imported product affects both the country exporting a product and the country importing that product.

(i) Tariff barriers create obstacles to trade, decrease the volume of imports and exports and therefore of international trade. The prospect of market access of the exporting country is worsened when an importing country imposes a tariff.

(ii) By making imported goods more expensive, tariffs discourage domestic consumers from consuming imported foreign goods. Domestic consumers suffer a loss in consumer surplus because they must now pay a higher price for the good and also because compared to free trade quantity, they now consume lesser quantity of the good.

(iii) Tariffs encourage consumption and production of the domestically produced import substitutes and thus protect domestic industries.

(iv) Producers in the importing country experience an increase in well-being as a result of imposition of tariff. The price increase of their product in the domestic market increases producer surplus in the industry. They can also charge higher prices than would be possible in the case of free trade because foreign competition has reduced.

(v) The price increase also induces an increase in the output of the existing firms and possibly addition of new firms due to entry into the industry to take advantage of the new high profits and consequently an increase in employment in the industry.

(vi) Tariffs create trade distortions by disregarding comparative advantage and prevent countries from enjoying gains from trade arising from comparative advantage. Thus, tariffs discourage efficient production in the rest of the world and encourage inefficient production in the home country.

(vii) Tariffs increase government revenues of the importing country by the value of the total tariff it charges.

11. (a) GDP_{MP} = (Value of output in primary sector - intermediate consumption of primary sector) + (value of output in secondary sector - intermediate consumption of secondary sector) + (value of output in tertiary sector - intermediate consumption of tertiary sector)

GDP_{MP} = (1000-500) + (900-400) + (700-400)

= 500+ 500 +300 = Rs.1300 crore

$GNP_{MP} = GDP_{MP} + NFIA$

= 1300 – 20 = Rs. 1280 crore

(b) Common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption

lessens the benefits available for others. This rival nature of common resources is what distinguishes them from pure public goods, which exhibit both non-excludability and non-rivalry in consumption. They are generally available free of charge. Some important natural resources fall into this category.

Since price mechanism does not apply to common resources, producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation.

(c) 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.

OR

An import quota is a direct restriction which specifies that only a certain physical amount of the good will be allowed into the country during a given time period, usually one year. Import quotas are typically set below the free trade level of imports and are usually enforced by issuing licenses. This is referred to as a binding quota.