November 2018 Examination PAPER – 8(A): FINANCIAL MANAGEMENT (60 Marks)

Question 1(a) - [5 Marks] [Ref. Q.16/76 of Classroom Notes]

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

Which form of financing should the company choose?

Answer 1(a) : Statement showing calculation of EPS :

	Financial Plans		
Particulars	Plan I (₹)	Plan II (₹)	
(a) Debt Component (given)	5,00,000	20,00,000	
(b) Equity Component (50 lakhs - a)	45,00,000	30,00,000	
(c) Market price per share (i.e. issue price)	300	300	
(d) No. of Equity Share to be issued [b / c]	15,000	10,000	
(e) Expected EBIT [given]	10,00,000	10,00,000	
(f) Interest on debt*:			
On first 5,00,000 @ 12%	60,000	60,000	
On next 15,00,000 @ 10%		1,50,000	
(g) Earnings before taxes [e - f]	9,40,000	7,90,000	
(h) Taxes @ 25% on (g)	2,35,000	1,97,500	
(i) Earnings after taxes (EAT) [g - h]	7,05,000	5,92,500	
(j) Earnings per shares (EPS) [i / d]	47	59.25	

Decision : Considering highest EPS, it is advisable to adopt Financing Plan II (i.e. Raising debt of ₹ 20 lakh and issue of equity share capital of ₹ 30 lakh.

(*Alternatively, interest on Debt for Plan II can be calculated as = $20,00,000 \times 10\%$ i.e. ₹ 2,00,000. In that case, the EPS for the Plan II will be ₹ 60.)

Question 1(b) - [5 Marks] [Ref. Q.7/86 of Classroom Notes]

Following information relation to Jee Ltd. are given:

Particulars

Profit after tax ₹10,00,000

Dividend payout ratio 50%

Number of Equity Shares 50,000

Cost of Equity 10%

Rate of return on Investment 12%

- (i) What would be the market value per share as per Walter's Model?
- (ii) What is the optimum dividend payout ratio according to Walter's Model and Market value of equity share at that payout ratio?

Answer 1(b):

(i) Walter's model is given by -

Where,

P = Market price per share

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

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

r = Return earned on investment = 12%

Ke = Cost of equity capital = 10%

(ii) According to Walter's model when the return on investment is more than the cost of equity capital, the price per share increases as the dividend payout ratio decreases. Hence, the optimum dividend payout ratio in this case is Nil. So, at a payout ratio of zero, the market value of the company's share will be:-

Question 1(c) - [5 Marks] [Ref. Q.25/25 of Classroom Notes]

The following is the information of XML Ltd. related to the year ended 31-03-2018:

Gross Profit	20% of Sales
Net Profit	10% of Sales
Inventory Holding period	3 months
Receivable collection period	3 months
Non-Current Assets to Sales	1:4
Non-Current Assets to Current Assets	1:2
Current Ratio	2:1
Non-Current Liabilities to Current Liabilities	1:1
Share Capital to Reserve and Surplus	4:1
Non-current Assets as on 31st March, 2017	₹ 50,00,00

Assume that:

- (i) No change in Non-Curent Assets during the year 2017-18
- (ii) No depreciation charged on Non-Current Assets during the year 2017-18
- (iii) Ignoring Tax

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

Answer 1(c):

(a) Workings

So, Current Assets = ₹ 1,00,00,000

Now further,

So, Sales = ₹ 2,00,00,000

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

(i) Cost of Goods Sold (COGS):

Cost of Goods Sold = Sales - Gross Profit

- = ₹ 2,00,00,000 **-** 20%
- = ₹ 1,60,00,000
- (ii) Net Profit = 10% of Sales = 10% of ₹ 2,00,00,000

(iii) Inventory:

Inventory Holding Period = 3 months

Inventory = $COGS \times 3/12$

= ₹ 1,60,00,000 x 3/12

= ₹40,00,000

(iv) Receivables:

Receivable Collection period = 3 months

Receivable = Sales $\times 3/12$

= ₹2,00,00,000 x 3/12

= ₹50,00,000

Note: It is assumed that all sales are on credit basis.

(v) Cash:

Cash = Current Assets - Inventory - Receivables

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

= ₹10,00,000

Question 1(d) - [5 Marks] [Ref. Q.13/191 of Classroom Notes]

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

Particulars

Initial Project Cost

Annual Cash Inflow

₹ 2,00,00,000

₹ 60,00,000

Project Life

5 years

Cost of Capital

10%

To which of the 3 factors, the project is most sensitive if the variable is adversely affected by 10% 2

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

Answer 1(d):

Note on Sensitivity Analysis:

If any variable of the project is adversely affected, then it will reduce the NPV of the project. The variable, which has highest adverse impact on NPV of the project is considered to be most sensitive to the project.

Approach:

We have to make 10% adverse change in the three variables given in the question i.e. Initial Project Cost, Annual Cash Inflow and Cost of Capital to calculate the revised NPV. The variable which most adversely affects the NPV of the project shall be treated as most sensitive.

(a) Calculation of Original NPV:

NPV = PV of Cash Inflow - PV of Cash Outflow = (Annual Cash Inflow x Annuity Factor) - Initial Project Cost = (₹60,00,000 x 3.791) - ₹2,00,00,000 = ₹27.46.000

(b) Sensitivity of Initial Project Cost:

Original Project Cost = ₹ 2,00,00,000 Revised Project Cost = ₹ 2,00,00,000 + 10% = ₹ 2,20,00,000 Revised NPV = (₹ 60,00,000 x 3.791) - ₹ 2,20,00,000 = ₹ 7,46,000

(c) Sensitivity of Annual Cash Inflow:

Original Cash inflow p.a. = ₹ 60,00,000 Revised Cash inflow p.a. = ₹ 60,00,000 - 10% = ₹ 54,00,000 Revised NPV = (₹ 54,00,000 x 3.791) - ₹ 2,00,00,000 = ₹ 4,71,400

(d) Sensitivity of Cost of Capital:

Original Cost of Capital = 10% Revised Cost of Capital = 10% + (10% of 10%) = 10% + 1% = 11%

Note: When cost of capital increases, the present value decreases. Hence, increase in cost of capital has an adverse impact on NPV.

Revised NPV = (₹60,00,000 x 3.696) - ₹2,00,00,000 = ₹21,76,000

Conclusion: It may be noticed from the above calculations that the highest adverse impact on NPV is due to reduction in annual cash inflow. Hence, Project is most sensitive to 'annual cash inflow'.

Question 2 - [10 Marks] [Ref. Q.7/44 of Classroom Notes]

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

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

Additional Information:

- (i) Variable Cost is 60% of Sales.
- (ii) Fixed Cost p.a. excluding interest ₹ 20,00,000.
- (iii) Total Asset Turnover Ratio is 5 times.
- (iv) Income Tax Rate 25%

You are required to:

- (1) Prepare Income Statement
- (2) Calculate the following and comment:
 - (a) Operating Leverage
 - (b) Financial Leverage
 - (c) Combined Leverage

Answer 2:

Workings:-

Total Assets = ₹ 1 crore

Total Sales

Total Asset Turnover Ratio i.e. ---- = 5

Total Assets

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

(1) Income Statement:

Particulars	(₹ in lakhs)
Sales	500
Less: Variable cost @ 60%	300
Contribution	200
Less: Fixed cost (other than Interest)	20
EBIT (Earnings before interest and tax)	180
Less: Interest on debentures (12% x 50 Lakhs)	6
EBT (Earnings before tax)	174
Less: Tax 25%	43.50
EAT (Earnings after tax)	130.50

(2) (a) Operating Leverage

It indicates fixed cost in cost structure. It indicates sensitivity of earnings before Interest and tax (EBIT) to change in sales at a particular level. It measures operating risk of the company. The above operating leverage indicates that 1% change in sales will cause 1.11% change in EBIT.

(b) Financial Leverage

It indicates the financial risk of the company. The financial leverage is very low. It means, financial risk is very small vis-a-vis EBIT. The above financial leverage indicates that 1% change in EBIT will cause 1.03% change in EPS.

(c) Combined Leverage

The combined leverage indicates the total risk of the company. It studies the choice of fixed cost in cost structure and choice of debt in capital structure. It studies how sensitive the change in EPS is vis-a-vis change in sales. The above combined leverage indicates that 1% change in sales will cause 1.15% change in EPS.

Question 3 - [10 Marks] [Ref. Q.34/169 of Classroom Notes]

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

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

Other Information:

- (i) Selling price per unit ₹ 200
- (ii) Variable cost is 40% of sales
- (iii) Fixed cost p.a. ₹ 30,00,000.
- (iv) In addition to these advertisement expenditure will have to be incurred as under:

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

- (v) Income Tax is 25%
- (vi) Straight line method of depreciation is permissible for tax purpose.
- (vii) Cost of capital is 10%
- (viii) Assume that loss cannot be carried forward.

Present Value Table:

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

Advise about the project acceptability.

Answer 3:

(1) Calculation of Annual Cash Inflows:

Years	1	2	3 - 5	6 - 8
(a) Sales in units	60,000	80,000	1,40,000	1,20,000
	₹	₹	₹	₹
(b) Contribution @ ₹ 120 p.u.	72,00,000	96,00,000	1,68,00,000	1,44,00,000
[SP 200 x 60% PV Ratio]				
(c) Fixed cost	30,00,000	30,00,000	30,00,000	30,00,000
(d) Advertisement	50,00,000	25,00,000	10,00,000	5,00,000
(e) Depreciation (2,40,00,000/8)	30,00,000	30,00,000	30,00,000	30,00,000
(f) Profit /(Loss) [b - c - d - e]	(38,00,000)	11,00,000	98,00,000	79,00,000
(g) Tax @ 25%	*(9,50,000)	2,75,000	24,50,000	19,75,000
(h) Profit/(Loss) after tax [f-g]	(28,50,000)	8,25,000	73,50,000	59,25,000
(i) Cash inflow [h + e]	1,50,000	38,25,000	1,03,50,000	89,25,000

^{*}Note: PD Ltd. is an existing company, hence it is assumed that the loss of year 1 can be set off with other income of year 1 itself and hence tax @ 25% can be saved in year 1.

(2) Computation of NPV:

Particulars	Year	Cashflow (₹)	PVF @ 10%	PV (₹)
Initial Project cost	0	(2,40,00,000)	1.00	(2,40,00,000)
Investment in working capital	0	(30,00,000)	1.00	(30,00,000)
Annual Cash Inflows : (WN1)	\ \	1,50,000	0.909	1,36,350
1	2	38,25,000	0.826	31,59,450
	3	1,03,50,000	0.751	77,72,850
	4	1,03,50,000	0.683	70,69,050
	5	1,03,50,000	0.621	64,27,350
	6	89,25,000	0.564	50,33,700
	7	89,25,000	0.513	45,78,525
	8	89,25,000	0.467	41,67,975
Release of working capital	8	30,00,000	0.467	14,01,000
Net Present Value (NPV)			NPV	1,27,46,250

Recommendation: Accept the project in view of positive NPV.

Student Note: In ICAI suggested answer, tax saving on the loss of 1st year is ignored. However, due to positive NPV, the decision remains same.

Question 4 - [10 Marks] [Ref. Q.19/123 of Classroom Notes]

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

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

Should MN Ltd. introduce the proposed policy? (Assume a 360 days year).

Answer 4:

Student Notes to avoid Possible Mistakes:

- (a) 'Cost of Sales' given in the question should be interpreted as 'Cost of Goods Sold'. It is 80% of sales.
- (b) Variable cost is given as 70% of cost of sales and not 70% of sales. It means, variable cost is 70% of 80%, i.e. 56% of sales.
- (c) Fixed cost is also given as 30% of cost of sales and it will remain same.
- (d) Credit period at present is 15 days and it will increase to 45 days. It will not increase by 45 days, but will increase to 45 days.

Statement Showing Evaluation of Credit Policies:

(Figures in ₹)

Particulars	Present Policy	Proposed Policy
(a) Sales Turnover	30,00,000	36,00,000
Cy	(Given)	(30L + 20%)
(b) Variable Cost [56% of (a)]	16,80,000	20,16,000
(c) Fixed Cost [30,00,000 x 80% x 30%]	7,20,000	7,20,000
(d) Total Cost of Sales [b + c]	24,00,000	27,36,000
(e) Bad debts as % of sales	2%	3%
(f) Bad debt loss [a x e]	60,000	1,08,000
(g) Profit [a-d-e]	5,40,000	7,56,000
(h) Credit Period	15 days	45 days
(i) Investment in receivables [d x h / 360 days]	1,00,000	3,42,000
(j) Opportunity cost [15% x (i)]	15,000	51,300
(k) Net Benefit [g - j]	5,25,000	7,04,700
(I) Incremental benefit to the company		1,79,700

Recommendation: Proposed Policy i.e. credit of 45 days should be implemented by MN Ltd. since the net benefit under this policy is higher than those under present policy.

Student Note: In ICAI suggested answer, there is a mistake in calculation of opportunity cost on investment in receivables.

Question 5 - [10 Marks] [Ref. Q.10/72 of Classroom Notes]

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

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

Required:

- (a) Determine the total market value, Equity capitalization rate and weighted average cost of capital for each company assuming no taxes as per M.M. Approach.
- (b) Determine the total market value, Equity capitalization rate and weighted average cost of capital for each company assuming 40% taxes as per M.M. approach.

Answer 5:

(a) Assuming no tax as per MM Approach:

Note: In such case, MM approach says that the WACC (ko) remains same irrespective of the capital structure. With increase in debt proportion, the cost of equity (ke) starts increasing. However, total value of the firm remain same if the operating income of both the firms is same. It means, Market Value (V) of leveraged and unleveraged firm will be same.

 $= 11,52,000 / 46,00,000 \times 100$

Calculations for 'B Ltd.':

```
It is an unleveraged firm i.e. no debt firm. Hence, ko = ke
Equity Capitalisation Rate (ke) = 18% (given)
Hence, Weighted Average Cost of Capital (ko) = 18%
Market Value (V) of 'B Ltd.' = Operating Income / Cost of Equity
= 18,00,000 / 18% = ₹ 1,00,00,000
```

Calculations for 'A Ltd.':

```
It is a leveraged firm i.e. with debt firm.

Cost of debt (kd) = Interest Rate = 12%

Weighted Average Cost of Capital (ko) = 18% (i.e. same as B Ltd.)

Market Value (V) of 'A Ltd.' = ₹ 1,00,00,000 (i.e. same as B Ltd.)

Value of Equity (S) = Total Value of Firm (V) - Value of Debt (D)

= ₹ 1,00,00,000 - 54,00,000 = ₹ 46,00,000

Income for equity shareholders = Operating income - Interest on debt

= 18,00,000 - (12% x 54,00,000)

= 11,52,000

Equity Capitalisation Rate (ke) = Income for Equity / Value of Equity
```

= 25.04%

(b) Assuming 40% tax as per MM Approach:

Note: In such case, MM approach says that the WACC (ko) reduces with increase in debt proportion. Total value of leveraged firm is higher than the unleveraged firm, due to tax benefit.

Calculations for 'B Ltd.':

It is an unleveraged firm i.e. no debt firm. Hence, ko = ke

Equity Capitalisation Rate (ke) = 18% (given)

Hence, Weighted Average Cost of Capital (ko) = 18%

Income for equity shareholders = Operating income - 40% Tax

= 18,00,000 - 40% = 10,80,000

Market Value of Equity (S) of 'B Ltd.' = Income for Equity / Cost of Equity

= 10,80,000 / 18% = ₹ 60,00,000

Total Value of Firm (V) = Value of Equity (S) + Value of Debt (D)

=₹ 60,00,000 + 0 = ₹ 60,00,000

Calculations for 'A Ltd.':

It is a leveraged firm i.e. with debt firm.

Market Value (V) of 'A Ltd.' = Value of Unleveraged Firm + (Value of Debt x Tax Rate)

= ₹ 60,00,000 + (54,00,000 x 40%)

= ₹ 81,60,000

Value of Equity (S) = Total Value of Firm (V) - Value of Debt (D)

= ₹81,60,000 - 54,00,000 = ₹27,60,000

Cost of debt (kd) = Interest Rate x (1-T)

 $= 12\% \times (1 - 0.4) = 7.2\%$

Income for equity shareholders = Operating income - Interest on debt - Tax

 $= 18,00,000 - (12\% \times 54,00,000) - Tax$

= 11,52,000 - 40% = ₹ 6,91,200

Equity Capitalisation Rate (ke) = Income for Equity / Value of Equity

 $= 6,91,200 / 27,60,000 \times 100$

= 25.04%

Weighted Average Cost of Capital (ko) = $(ke \times S/V) + (kd \times D/V)$

= (25.04% x 27.60/81.60) + (7.2% x 54/81.60)

= 13.23% (approx)

Question 6 - [4 + 4 + 2 = 10 Marks]

Answer the following:

- (a) Explain in brief following Financial Instruments:
 - (i) Euro Bonds
 - (ii) Floating Rate Notes
 - (iii) Euro Commercial paper
 - (iv) Fully Hedged Bond

 $(1 \times 4 = 4 \text{ Marks})$

(b) Discuss the Advantages of Leasing

(4 Marks)

(c) Write two main objectives of Financial Management.

OF

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

Answer 6

- (a) (i) **Euro bonds**: Euro bonds are debt instruments which are not denominated in the currency of the country in which they are issued. E.g. a Yen note floated in Germany.
 - (ii) **Floating Rate Notes:** Floating Rate Notes are issued up to seven years maturity. Interest rates are adjusted to reflect the prevailing exchange rates. They provide cheaper money than foreign loans. The rate of interest keeps on floating on this debt instrument. The interest rate is calculated as Benchmark + Premium
 - (iii) **Euro Commercial Paper (ECP)**: ECPs are short term money market instruments. They are for maturities less than one year. They are usually designated in US Dollars.
 - (iv) **Fully Hedged Bond**: In foreign bonds, the risk of currency fluctuations exists. Fully hedged bonds eliminate the risk by selling in forward markets the entire stream of principal and interest payments.
- (b) (i) Lease may be a low cost alternative: Leasing is alternative to purchasing. As the lessee is to make a series of payments for using an asset, a lease arrangements is similar to a debt contract. The benefit of lease is based on a comparison between leasing and buying an asset. Many lessees find lease more attractive because of low cost.
 - (ii) **Tax Benefit :** In certain cases tax benefit of depreciation available for owning an asset may be less than that available for lease payment. Lease rent is deductible for tax purposes.
 - (iii) **Working capital conservation:** When a firm buy an equipment by borrowing from a bank (or finance institution), they never provide 100% financing. But in case of lease one gets normally 100% financing. This enables conservation of working capital.
 - (v) Preservation of Debt Capacity: Operating lease does not matter in computing debt equity ratio. This enables the lessee to go for debt financing more easily. The access to and ability of a firm to get debt financing is called debt capacity (also, reserve debt capacity).
 - (vi) **Obsolescence and Disposal**: After purchases of leased asset there may be technological obsolescence of the asset. That means a technologically upgraded asset with better capacity may come into existence after purchase. To retain competitive advantage the lessee may give back the old asset and take new asset on lease, to go for the upgraded asset.

(c) Two main Objective of Financial Management

(i) **Profit Maximisation**

It has traditionally been argued that the primary objective of a company is to earn profit, hence the objective of financial management is also profit maximisation. That is maximisation of the return on investment (ROI).

(ii) Risk Minimisation

While raising the funds, it should be kept in mind to minimise the risk. That is minimisation of weighted average cost of capital (WACC) of the firm.

Both the above together leads to Wealth / Value Maximization.

OR

Main reasons for considering risk in capital budgeting decisions:

- 1. There is an opportunity cost involved while investing in a project for the level of risk. Adjustment of risk is necessary to help make the decision as to whether the returns out of the project are proportionate with the risks borne and whether it is worth investing in the project over the other investment options available.
- 2. Risk adjustment is required to know the real value of the Cash Inflows.

