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DISCOVER MATERIAL [PART III]

(COVERS PAST EXAM QUESTION PAPERS UPTO MAY – 2019)

(IN THIS PART WE HAVE INCLUDED FINANCIAL MANAGEMENT PAPER OF CA INTER)

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DISCOVER_2E / FINANCIAL MANAGEMENT
WE HAVE INCLUDED THE PAST EXAM QUESTION PAPERS OF 7 RECENT ATTEMPTS UNDER IPCC & 3 RECENT ATTEMPTS UNDER CA INTER UPTO MAY 2019

1.TIME VALUE OF MONEY

1. Mr. B will require 30 lakhs after 10 years from now. He wants to ascertain an amount to be invested in a fund which pays interest @ 10% i.e., annum. **[N17 (O) – 5M]**

Following options are available to him

i) To make annual payment into the fund at the end of each year.

ii) To invest a Lumpsum amount in the fund at the end of the year.

iii) To make annual payment into the fund in the beginning of each year.

Find out the amount to be invested under each of the options given above.

Factors are as under :

FVIF/CVF (10%, 10) = 2.594, FVIFA/CVFA (10%,10) = 15.937

PVIF/PVF (10%, I0) = 0.386 PVIFA/PVFA (10%, 10) = 6.145

2. A company has purchased a plant for Rs.10,00,000 with a useful life of 6 years. It expects that Rs.15,00,000 will be required to replace the plant after 6 years. To ensure that money is available at the time of replacement, the company has created a sinking fund. **[M16 (O) – 5M]**

You are required to determine the amount to be deposited annually, if the fund earns interest at 8% per annum. Given $CVFA_{(0.08,6)} = 7.336$

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2.INVESTMENT DECISIONS

1. Kanoria Enterprises wishes to evaluate two mutually exclusive projects X and Y. **[M19 (N) – 5M]**

The particulars are as under:

	Project X (Rs.)	Project Y (Rs.)
Initial Investment	1,20,000	1,20,000
Estimated cash inflows (per annum for 8 years)		
Pessimistic	26,000	12,000
Most likely	28,000	28,000
Optimistic	36,000	52,000

The cut off rate is 14%. The discount factor at 14% is:

Year	1	2	3	4	5	6	7	8	9
Discount factor	0.877	0.769	0.675	0.592	0.519	0.456	0.400	0.351	0.308

Advise management about the acceptability of projects X and Y.

2. AT Limited is considering three projects A, B and C. The cash flows associated with the projects are given below: **[M19 (N) – 10M]**

Cash flows associated with the Three Projects (Rs.)

Project	C0	C1	C2	C3	C4
A	(10,000)	2,000	2,000	6,000	0
B	(2,000)	0	2,000	4,000	6,000
C	(10,000)	2,000	2,000	6,000	10,000

You are required to:

a. Calculate the payback period of the each of the three projects

b. If the cut-off period is two years then which project should be accepted?

c. Find out the Projects with positive NPV if the opportunity cost of capital is 10%

d. Pay back gives too much weight to cash flows that occur after the cut-off date. True or false?

e. If a firm used a single cut-off period for all the projects, it is likely to accept too many short lived projects. True or false?

P.V Factor @ 10 %

Year	0	1	2	3	4	5
P.V	1.000	0.909	0.826	0.751	0.683	0.621

3. PD Ltd. an existing company, is planning to introduce a new product with projected life of 8 years. Project cost will be Rs.2,40,00,000. At the end of 8 years no residual value will be realized. Working capital of Rs.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 are expected to be as under: **[N18 (N) – 10M]**

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 Rs.200

(ii) Variable cost is 40% of sales.

(iii) Fixed cost p.a. Rs.30,00,000.

(iv) In addition to these, advertisement expenditure will have to be incurred as under:

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Year	1	2	3 - 5	6 - 8
Expenditure (Rs.)	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.

4. A Doctor is considering purchasing a machine at a cost of Rs.1,20,000. The projected life of the machine is 5 years and has an expected salvage value of Rs.10,000 at the end of 5 years. The annual operating cost of the machine is Rs.2,000. It is expected to generate revenues of Rs.60,000 per year for five years. At present the Doctor is outsourcing his work related to this machine and earns commission income of Rs.15,000 per annum; net of taxes. Tax Rate is 30%.

You are required to find as to whether it would be profitable for the Doctor to purchase the machine? Give your advice based on:

(i) Net Present Value Method (ii) Profitability Index Method **[N18 (O) – 8M]**

Year	1	2	3	4	5	Total
PVF @ 9%	0.917	0.842	0.772	0.708	0.650	3.889

5. A proposal to invest in a project, which has a useful life of 5 years and no salvage value at the end of useful life, is under consideration of a firm. It is anticipated that the project will generate a steady cash inflow of Rs.70,000 per annum. After analysing other facts of the project, following information was revealed: **[M18 (O) – 8M]**

Internal rate of return - 13%

Desirability factor - 1.07762

You are required to find out:

(i) Cost of project (ii) Cost of capital

(iii) Payback period (iv) Net present value

Present value factors at different rates are given as under:

Year	10%	11%	12%	13%
1	0.909	0.901	0.893	0.885
2	0.826	0.812	0.797	0.783
3	0.751	0.731	0.712	0.693
4	0.683	0.659	0.636	0.613
5	0.621	0.593	0.567	0.543
Total	**3.790**	**3.696**	**3.605**	**3.517**

Note: Use only above present values to solve this question.

6. A firm can make investment in either of the following two projects. The firm anticipates its cost of capital to be 10%. The pre-tax cash flows of the projects for five years are as follows: **[N17 (O) – 8M]**

Year	0	1	2	3	4	5
Project A (Rs.)	(200000)	35000	80000	90000	75000	20000
Project B (Rs.)	(200000)	218000	10000	10000	4000	3000

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Ignore Taxation. An amount of Rs.35,000 will be spent on account of sales promotion in year 3 in case of Project A. This has not been taken into account in calculation of pre-tax cash flows.

The discount factors are as under:

Year	0	1	2	3	4	5
PVF(10%)	1	0.91	0.83	0.75	0.68	0.62

You are required to calculate for each project:

i) The payback period ii) The discounted payback period

iii) Desirability factor iv) Net Present Value

7. X Limited is considering purchase a of new plant worth Rs.80,00,000. The expected net cash flows after taxes and before depreciation are as follows: **[M17 (O) – 8M]**

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

The rate of cost of capital is 10%. You are required to calculate:

i) Pay-back period **ii)** Net present value at 10% discount factor

iii) Profitability index at 10% discount factor

iv) Internal rate of return with the help of 10% and 15% discount factor

The following present value table is given for you:

Year	1	2	3	4	5	6	7	8	9	10
Present value Rs. of 1 at 10% discount rate	0.909	0.826	0.751	0.683	0.621	0.564	0.513	0.467	0.424	0.386
Present value Rs. of 1 at 15% discount rate	0.870	0.756	0.658	0.572	0.497	0.432	0.376	0.327	0.284	0.247

8. Given below are the data on a capital project 'C': **[M16 (O) – 8M]**

Cost of the project Rs. 2,28,400

Useful life 4 years

Profitability index 1.0417

Internal rate of return 15%

Salvage value 0

You are required to calculate:

i) Annual cash flow

ii) Cost of capital

iii) Net present value (NPV)

iv) Discounted payback period.

Given the following table of discount factors:

Discount Factor	15%	14%	13%	12%
1 year	0.869	0.877	0.885	0.893
2 years	0.756	0.769	0.783	0.797
3 years	0.658	0.675	0.693	0.712
4 years	0.572	0.592	0.613	0.636

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3. COST OF CAPITAL

1. Alpha Ltd. has furnished the following information: **[M19 (N) – 5M]**

Earnings per Share (EPS) Rs.4 Dividend Pay-out ratio 25%

Market price per share Rs.50 Rate of tax 30%

Growth rate of dividend 10%

The company wants to raise additional capital of Rs.10 lakhs including debt of Rs.4 lakhs. The cost of debt (before tax) is 10% upto Rs.2 lakhs and 15% beyond that. Compute the after tax cost of equity and debt and also weighted average cost of capital.

2. The capital Structure of Bright Ltd.as on 31.03.2019 is as follows: **[M19 (O) – 5M]**

	Rs .in Lakhs
Equity Share capital : 7,50,000 equity share of RS.100 each	750
Retained earnings	250
13.5% Preference shares capital	240
12.5% Debentures	360

The current market price per equity share is Rs. 350.The prevailing default risk free interest rate is 6% and Rate of return on market portfolio is 15%. The Beta of the company is 1.289.

The corporate tax rate is 30% .The average tax rate of shareholders is 25% and brokerage cost is 2% that they have to pay while investing dividends in alternative securities.

Required: Calculate the weighted average cost of capital on the basis of book value weights.

3. PQR Ltd. has the following capital structure at book value: **[N18 (O) – 8M]**

Particulars	Amount (Rs.)
Equity Share Capital (Rs.10 each)	1,50,00,000
10% Preference share capital (Rs.100 each)	50,00,000
9% Debentures (Rs.1,000 each)	1,50,00,000
9.5% Term Loan	2,00,00,000

Debentures are redeemable after 3 years and are being currently quoted at Rs.980 per debenture in the market.

Preference shares are also redeemable after 5 years and currently selling at Rs.98.50 per share.

The current market price of one equity share is Rs.75. The risk free interest rate is 6.25%. The market portfolio return is 15.25%. The beta of the company is 1.93.

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

You are required to calculate the cost of the following using market value as weight:

(i) Equity share (ii) Preference share

(iii) 9% Debenture (iv) 9.5% Term loan

(v) Weighted average cost of capital

4. JC Ltd. is planning an equity issue in current year. It has earnings per share (EPS) of Rs.20 and proposes to pay 60% dividend at the current year end. With a PE ratio 6.25, it wants to offer the issue at market price. The flotation cost is expected to be 4% of the issue price. **[M18 (O) – 5M]**

Required:

Determine the required rate of return for equity share (cost of equity) before the issue and after the issue.

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5. PNR Limited and PXR Limited are identical in every respect except capital structure. PNR Limited does not employ debts in its capital structure whereas PXR Limited employs 12% Debentures amounting to Rs.20,00,000. The following additional information are given to you: **[M17 (O) – 8M]**

i) Income tax rate is 30%

ii) EBIT is 5,00,000

iii) The equity capitalization rate of PNR Limited is 20% and

iv) All assumptions of Modigliani-Miller Approach are met.

Calculate:

i) Value of both the companies,

ii) Weighted average cost of capital for both the companies.

6. ABC company's equity share is quoted in the market at Rs. 25 Per share currently. The company pays a dividend of Rs. 2 per share and the investor's market expects a growth rate of 6% per year.

You are required to:

i) Calculate the company's cost of equity capital.

ii) If the anticipated growth rate is 8% per annum, calculate the indicated market price per share.

iii) If the company issues 10% debentures of face value of Rs. 100 each and realizes Rs. 96 per debenture while the debentures are redeemable after 12 years at a premium of 12% what will be the cost of debenture?

Assume Tax Rate to be 50%. **[N16 (O) – 5M]**

7. Following is the capital structure of RBT Limited as on 31st march 2016: **[N16 (O) – 8M]**

Particulars	Book Value (Rs.)	Market Value (Rs.)
Equity shares of Rs. 10 each	50,00,000	1,05,00,000
Retained earnings	13,00,000	-
11% Preference shares of Rs. 100 each	7,00,000	9,00,000
14% debentures of Rs. 100 each	30,00,000	36,00,000

Market price of equity shares is Rs. 40 per share and it is expected that a dividend of Rs. 4 per share would be declared. The dividend per share is expected to grow at the rate of 8% every year. Income tax rate applicable to the company is 40% and shareholder's personal income tax rate is 20%.

You are required to calculate:

i) Cost of capital for each source of capital,

ii) Weighted average cost of capital on the basis of book value weights,

iii) Weighted average cost of capital on the basis of market value weights.

8. The X Company has following capital structure at 31st March, 2015 which is considered to be optimum. **[M16 (O) – 8M]**

	Rs.
14% Debentures	3,00,000
11% Preference Shares	1,00,000
Equity (100000 shares)	16,00,000
	20,00,000

The company's share has a current market price of Rs. 23.60 per share. The expected dividend per share next year is 50% of 2015 BPS. The following are the earning per share figure for the company during preceding ten years. The past trends are expected to continue.

Year	EPS (Rs.)	Year	EPS(Rs.)
2006	1.00	2011	1.61
2007	1.10	2012	1.82
2008	1.21	2013	1.95
2009	1.33	2014	2.15
2010	1.46	2015	2.36

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 dividend of 1.1 per share) were also issued. The company is in 50% tax bracket.

i) Calculate after tax cost of (a) New debt (b) New Preference share (c) New equity share (consuming new equity from retained earnings)

ii) Calculate marginal cost of Capital when no new shares was issued.

iii) How much can be spent for capital investment before new ordinary shares must be sold? Assuming the retained earnings for next year's investment are 50% of 2015.

iv) What will be the marginal cost of capital when the funds exceeds the amount calculated in (iii), assuming new equity is issued at Rs. 20 per share?

4.LEVERAGES

1. The Capital structure of the Shiva Ltd. Consists of equity share capital of Rs 20,00,000 (Share of Rs 100 per value) and Rs 20,00,000 of 10% Debentures sales increased by 20 % from 2,00,000 units to 2,40,000 units , the selling price is Rs 10 per unit variable cost amount to Rs 6 per unit and fixed expenses amount to Rs 4,00,000. The income tax rate is assumed to be 50% **[M19 (N) – 10M]**

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a) You are required to calculate the following

i. The percentage increase in earnings per share

ii. Financial Leverage at 2,00,000 units and 2,40,000 units

iii. Operating Leverage at 2,00,000 units and 2,40,000 units

b) Comment on the behaviour of operating and financial leverages in relation to increase in production from 2,00,000 units to 2,40,000 units.

2. Following is the Balance Sheet of Soni Ltd. as on 31st March, 2018: **[N18 (N) – 10M]**

Liabilities	**Amount (Rs.)**
Shareholders' Funds Equity Share Capital (Rs.10/- each) Reserves & Surplus	 25,00,000 5,00,000
Non-Current Liabilities (12% Debentures)	50,00,000
Current Liabilities	20,00,000
Total	1,00,00,000
Assets	**Amount (Rs.)**
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 Rs.20,00,000.

(iii) Total Asset Turnover Ratio is 5 times.

(iv) Income Tax Rate 25%

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You are required to:

(1) Prepare Income Statement

(2) Calculate the following and comment:

(a) Operating Leverage (b) Financial Leverage (c) Combined Leverage

3. A Company has Sales of Rs.1,00,00,000; Variable Cost is 55% of Sales and fixed Cost is Rs.6,00,000. The Capital Structure of the company is: Equity Rs.1,20,00,000 and 8% Debt Rs.80,00,000. **[N18 (O) – 5M]**

Required:

(i) Calculate Company's Operating, Financial and Combined Leverages.

(ii) If the Sales amount is increased by 12%, by what percentage EBIT will increase?

4. The following data have been extracted from the books of LM Ltd: **[M18 (N) – 5M]**

Sales	Rs.100 lakhs
Interest Payable per annum	Rs.10 lakhs
Operating leverage	1.2
Combined leverage	2.16

You are required to calculate:

i) The financial leverage, ii) Fixed cost and iii) P/V ratio

5. Following are the selected financial information of A Ltd. and B Ltd. for the year ended March 31, 2018: **[M18 (O) – 8M]**

Particulars	A Ltd.	B Ltd.
Variable Cost Ratio	60%	50%
Interest	Rs.20,000	Rs.1,00,000
Operating Leverage	5	2
Financial Leverage	3	2
Tax Rate	30%	30%

You are required to find out

i) EBIT ii) Sales iii) Fixed Cost

iv) Identify the company which is better placed with reasons based on leverages.

6. The following details of a company for the year ended 31st March 2017 are given below: **[N17 (O) – 8M]**

Operating leverage 2 : 1

Combined leverage 2.5: 1

Fixed Cost excluding interest Rs.3.4 lakhs

Sales Rs.50 lakhs

8% Debentures of 100 each Rs.30.25 lakhs

Equity Share Capital of 10 each Rs.34 lakhs

Income Tax Rate 30%

Required:

i) Calculate Financial Leverage

ii) Calculate P/V ratio and Earning per Share (EPS)

iii) If the company belongs to an industry, whose assets turnover is 1.5 does it have a high or low assets turnover'?

iv) At what level of sales, the Earning before Tax (EBT) of the company will be equal to zero?

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7. You are given the following information of 5 firms of the same industry: **[M17 (O) – 5M]**

Name of the Firm	Change in Revenue	Change in Operating Income	Change in Earning per share
M	28%	26%	32%
N	27%	34%	26%
P	25%	38%	23%
Q	23%	43%	27%
R	25%	40%	28%

You are required to calculate:

i) Degree of operating leverage and

ii) Degree of combined leverage for all firms.

8. The following information is related to YZ Company Ltd. for the year ended 31st March, 2016: **[N16 (O) – 5M]**

Equity share capital (of Rs. 10 each) Rs. 50 lakhs

12% Bonds of Rs. 1000 each Rs. 37 lakhs

Sales Rs. 84 lakhs

Fixed cost (excluding interest) Rs. 6.96 lakhs

Financial leverage 1.49

Profit-volume Ratio 27.55%

Income Tax Applicable 40%

You are required to calculate :

i) Operating Leverage; ii) Combined leverage; and iii) Earnings per share.

Show calculations upto two decimal points.

9. A company had the following balance sheet as on 31st March, 2015. **[M16 (O) – 5M]**

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Equity share capital of Rs. 10 each	40,00,000	Fixed Assets (Net)	1,28,00,000
Reserves & Surplus	8,00,000	Current Assets	32,00,000
15% Debentures	80,00,000		
Current Liabilities	32,00,000		
	1,60,00,000		**1,60,00,000**

The additional information given is as under:

Fixed cost per annum (excluding interest) Rs. 32,00,000

Variable operating cost ratio 70%.

Total assets turnover ratio 2.5

Income tax rate 30%.

Calculate the following:

i) Operating Leverage ii) Financial Leverage iii) Combined Leverage iv) Earnings per share

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5. ADVANCED CONCEPTS IN INVESTMENT DECISIONS

Note: the impact of taxation on NPV analysis, the impact of inflation on NPV analysis & Adjusted present value had been removed from the syllabus

1. Aar Cee manufacturing co. is considering a proposal to replace one of its existing machines by the CNC machine. In this connection the following information available: **[M19 (O) – 8M]**

The existing machine was bought 3 years ago for Rs. 15,40,000. It was depreciated on straight basis and has remaining useful life of 7 years Its annual maintenance cost is expected to Increase by Rs.40,000 from the sixth year of its installation its present realizable value is Rs.6,50,000.

The purchase price of CNC machine is Rs.27,00,000 and installation expenses of Rs.95,000 will be incurred Subsidy equal to 15% of the purchase price will be received at the end of the first year of its installation.It is subject to same rate depreciation.Its Realizable value after 7 years Is Rs.5,70,000. With the CNC machine, annual cash operating costs are expected to decrease by Rs.2,16,000. In addition, CNC machine would increase productivity on account of which net cash revenue would increase by Rs 2,76,000 per annum.

The tax rate applicable to firm is 30% and cost of capital is 11%.

Required:

Advise the firm whether to replace the existing machine with CNC machine on the basis of net present value.

The present value factor at 11% is as follows:

Year	1	2	3	4	5	6	7
PV @ 11%	0.901	0.812	0.731	0.659	0.593	0.535	0.482

2. A company is evaluating a project that requires initial investment of Rs.60 lakhs in fixed assets and Rs.12 lakhs towards additional working capital. **[M18 (N) – 10M]**

The project is expected to increase annual real cash inflow before taxes by Rs.24,00,000 during its life. The fixed assets would have zero residual value at the end of life of 5 years.

The company follows straight line method of depreciation which is expected for tax purposes also. Inflation is expected to be 6% per year. For evaluating similar projects, the company uses discounting rate of 12% in real terms. Company's tax rate is 30%.

Advise whether the company should accept the project, by calculating NPV in real terms.

PVIF	(12%, 5 years)	PVIF	(6%, 5 years)
Year 1	0.893	Year 1	0.943
Year 2	0.797	Year 2	0.890
Year 3	0.712	Year 3	0.840
Year 4	0.636	Year 4	0.792
Year 5	0.567	Year 5	0.747

6.CAPITAL STRUCTURE

1. RM steels Limited requires Rs. 10,00,000 for construction of a new plant. It is considering three financial plans: **[M19 (N) – 10M]**

(i) The company may issue 1,00,000 ordinary shares at Rs. 10 per share;

(ii) The company may issue 50,000 ordinary shares at Rs.10 per share and 5,000 debentures of Rs.100 denominations bearing a 8 percent rate of dividend.

If RM steels Limited's earnings before interest and taxes are Rs.20,000; Rs.40,000; Rs.80,000; Rs.1,20,000 and Rs.2,00,000, you are required to compute the earnings per share under each of the three financial plans? Which alternative would you recommend for RM steels and why? Tax rate is 50%.

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2. Vikalp Ltd. provides you the following information for the year ending 31.03.2019: **[M19 (O) – 8M]**

	Amount (Rs.)
Earnings before interest and tax	28,80,000
Less: Interest on long term loans @ 12%	2,70,000
Interest on Debentures @ 10%	3,60,000
(Debentures issued on 01.08.2018)	
Earnings after tax	22,50,000
Less: Tax @ 30%	6,75,000
Earnings after tax	15,75,000
6,30,000 equity shares (of RS.10 each)	
Ruling Market price per share	24
Undistributed reserves and surplus	60,50,000

The Company needs to raise Rs.30,00,000 for modernization of its plants and has the following options of raising a funds:

(i) Raise the entire funds by 13% long term loan or

(ii) Raise partly by issue of Rs. 75,000 equity shares @ 20 per share and balance by 11% debentures.

The company expects the rate of return on funds employed to be improved by 3% because of modernization and that if Debt Equity ratio (Debt/Debt + equity) exceeds 45%, then price earnings ratio is to go down by 15%.

Required: if the Company is to follow policy of maximizing the market value of equity share, which option should it choose?

3. Y Limited requires Rs.50,00,000 for a new project. This project is expected to yield earnings before interest and taxes of Rs.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 Rs.5,00,000 or Rs.20,00,000 and the balance, in each case, by issuing Equity Shares. The company's share is currently selling at Rs.300, but is expected to decline to Rs.250 in case the funds are borrowed in excess of Rs.20,00,000. The funds can be borrowed at the rate of 12 percent upto Rs.5,00,000 and at 10 percent over Rs.5,00,000. The tax rate applicable to the company is 25 percent. **[N18 (N) – 5M]**

Which form of financing should the company choose?

4. Sun Ltd. is considering two financing plans. **[M18 (N) – 5M]**

Details of which are as under:

a. Fund's requirement – Rs.100 Lakhs

b. Financial Plan

Plan	Equity	Debt
I	100%	-
II	25%	75%

b. Cost of debt – 12% p.a.

c. Tax Rate – 30%

d. Equity Share ` 10 each, issued at a premium of Rs.15 per share

e. Expected Earnings before Interest and Taxes (EBIT) Rs.40 Lakhs

You are required to compute:

i) EPS in each of the plan ii) The Financial Break Even Point

iii) Indifference point between Plan I and II

5. The X Ltd. is willing to raise funds for its new project which requires an investment of 84 lakhs. The company has two options **[N17 (O) – 5M]**

Option I To issue Equity Shares (Rs10 each) only

Option II: To avail term loan at an interest rate of 12%. But in this case, as insisted by the financing agencies, the company will have to maintain a debt equity proportion of 2 : 1.

The corporate tax rate is 30%.

Find out the point of indifference for the project.

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6. India Limited requires Rs. 50,00,000 for a new Plant. This Plant is expected to yield earnings before interest and taxes of Rs. 10,00,000. While deciding about the financial plan, the company considers the objective of maximising earnings per share. It has three alternatives to finance the project – by raising debt of Rs. 5,00,000 or Rs. 20,00,000 or Rs. 30,00,000 and the balance, in each case, by issuing equity shares. The company's share is currently selling at Rs. 150, but is expected to decline to Rs. 125 in case the funds are borrowed in excess of Rs. 20,00,000. The funds can be borrowed at the rate of 9 percent up to Rs. 5,00,000. at 14 percent over Rs. 5,00,000 and up to Rs. 20,00,000 and at 19 percent over Rs. 20,00,000. The tax rate applicable to the company is 40 percent. **[N16 (O) – 8M]**

Which from of financing should company choose? Show EPS Amount up to two decimal points.

7.RISK ANALYSIS IN CAPITAL BUDGETING

Note: Monte Carlo Simulation, Decision Tree Analysis are removed from syllabus

1. 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: **[N18 (N) – 5M]**

Particulars

Initial Project Cost Rs.2,00,00,000

Annual Cash Inflow Rs. 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 ?

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

2. XYZ Ltd. is presently all equity financed. The directors of the company have been evaluating investment in a project which will require Rs.270 lakhs capital expenditure on new machinery. They expect the capital investment to provide annual cash flows of Rs.42 lakhs indefinitely which is net of all tax adjustments. The discount rate which it applies to such investment decisions is 14% net. **[M18 (N) – 8M]**

The directors of the company believe that the current capital structure fails to take advantage of tax benefits of debt, and propose to finance the new project with undated perpetual debt secured on the company's assets. The company intends to issue sufficient debt to cover the cost of capital expenditure and the after tax cost of issue.

The current annual gross rate of interest required by the market on corporate undated debt of similar risk is 10%. The after tax costs of issue are expected to be Rs.10 lakhs.

Company's tax rate is 30%.

You are required to calculate:

(i) The adjusted present value of the investment, (ii) The adjusted discount rate and

(iii) Explain the circumstances under which this adjusted discount rate may be used to evaluate future investments.

MASTER MINDS

8.DIVIDEND DECISIONS

1. The following information is supplied to you: **[M19 (N) – 5M]**

Total Earning	Rs.40 lakhs
No. of Equity shares (of Rs.100 each)	4,00,000
Dividend per share	Rs.4
Cost of Capital	16%
Internal rate of return on investment	20%
Retention ratio	60%

Calculate the market price of a share of a company by using:

(i) Walter's formula ii) Gordon's formula

2. Following information relating to Jee Ltd. are given: **[N18 (N) – 5M]**

Particulars	**Rs.**
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?

3. The following data relate to two companies belonging to the same risk class: **[N18 (N) – 10M]**

Particulars	A Ltd.	B Ltd.
Expected Net Operating Income	Rs.18,00,000	Rs.18,00,000
12% Debt	Rs.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.

4. Stop-go Ltd, an all equity financed company, is considering the repurchase of Rs.200 lakhs equity and to replace it with 15% debentures of the same amount. Current market Value of the company is Rs.1140 lakhs and its cost of capital is 20%. It's Earnings before Interest and Taxes (EBIT) are expected to remain constant in future. It's entire earnings are distributed as dividend. Applicable tax rate is 30 per cent. **[M18 (N) – 5M]**

You are required to calculate the impact on the following on account of the change in the capital structure as per Modigliani and Miller (MM) Hypothesis:

i) The market value of the company **ii)** It's cost of capital, and **iii)** It's cost of equity

9. MANAGEMENT OF WORKING CAPITAL

1. Bite Limited manufactures used in the steel industry the following information regarding the company is given for your consideration **[M19 (N) – 10M]**

a) Expected Level of production 9000 units per annum

b) Raw materials are expected to remain in store for an average of two months before issue to production

c) Work in progress (50 percent as to conversion cost) will approximate to ½ months Production

d) Finished goods remain in warehouse for an average for one month

e) Credit allowed by supplier is one month

f) Two month's credit is normally to debtors

g) A minimum cash balance of Rs 67,500 is expected to be maintained

h) Cash sales are 75 % less than the credit

i) Safety margin of 20 % to cover unforeseen contingencies

j) The productions pattern is assumed to be even during the year

k) The cost structure for Bite Limited's product is as follows

Particulars	Amount Rs
Raw Material	80 per unit
Direct Labour	20 per unit
Overheads (Including depreciation Rs 20)	80 per unit
Total Cost	180 per unit
Profit	20 per unit
Selling Price	200 per unit

You are required to estimate the working capital requirement of Bite Limited

2. HT Ltd. has sales of RS.960 Lakhs Selling price per unit is Rs.80 and variable operating cost is 75% of selling price and average cost per unit is Rs.70. The cost of funds is 12%. Average collection period is 75 days, bad debt losses are 4% of sales and collection expenses are Rs.15.60 Lakhs Company is considering whether collection policies should be made strict due to rigorous collection procedures, sales are expected to decline to Rs.920 lakhs Average collection period will reduce to 60days and bad debts will reduce to 2.5% of sales Annual collection expenses will increase to Rs.22.50 Lakhs. **[M19 (O) – 5M]**

Required: Should the company carry out the proposal?

(Assume 360 days in a year and investment in debtors are calculated on total cost)

3. Calculate the amount of working capital required for XYZ Ltd. from the following information: **[M19 (O) – 8M]**

Elements of Cost	Per unit (Rs.)
Raw Material	80.00
Dire Labour	30.00
overheads	60.00
Total Cost	170.00

Raw materials are held in stock on an average for one month. Work-in progress (completion stage 50 per cent), on an average half a month. Finished goods are in stock on an average for one month. Credit allowed by suppliers is one month and credit allowed to debtors is two months. Time lag in payment of wages is 1½ weeks. Time lag in payment of overheads is one month. One fourth of the sales are made on cash basis.

Cash in hand and at bank is expected to be Rs. 50,000

You are required to prepare statement showing the working capital needed to finance a level of activity of 52,000 unit of production. Assume that production is carried on evenly throughout the year and wages and overhead accrue similarly. For the calculation purpose 4 weeks may be taken as equivalent to a month and 52 weeks in a year.

4. MN Ltd. has a current turnover of Rs.30,00,000 p.a. Cost of Sale 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. **[N18 (N) – 10M]**

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.

MASTER MINDS

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

5. The following information has been extracted from the books of ABS Limited: **[N18 (O) – 8M]**

Particulars	01.04.2017 (Rs.)	31.03.2018 (Rs.)
Raw Material	1,00,000	70,000
Works-in-progress	1,40,000	2,00,000
Finished goods	2,30,000	2,70,000

Other information for the year:

Particulars	Amount (Rs.)
Average receivables	2,10,000
Average payables	3,14,000
Purchases	15,70,000
Wages and overheads	17,50,000
Selling expenses	3,20,000
Sales	42,00,000

All purchases and sales are on credit basis. Company is willing to know:

(i) Net operating cycle period

(ii) Amount of working capital requirements (Assume 360 days in a year)

6. YZ Ltd. has the following balances as on 1st April, 2018: **[N18 (O) – 8M]**

Particulars	Amount (Rs.)
Plant and Equipment	13,60,000
Accumulated Depreciation	4,76,000

Inventories and Bills Receivable	6,24,000
Cash and Cash Equivalent	94,500
Bills Payable	1,14,000
Equity Share Capital (Face Value Rs.100 each)	7,00,000

The Company has made the following estimates for the Financial Year 2018-2019:

i) The Company will pay tax-free Dividend of 12%, the rate of dividend distribution tax being 20%.

ii) The Company will acquire Plant at a cost of Rs.2,40,000 after selling one machine for Rs.46,000 costing Rs.1,06,000 and on which depreciation provided amounted to Rs.74,200.

iii) At the financial year-end. Inventories and Bills Receivable are expected to be Rs.6,70,000: and Bills Payable are expected to be Rs.1,52,000.

iv) The Profit would be Rs.1,20,600 after charging depreciation of Rs.1,25,000

v) You are required to prepare the Projected Cash Flow Statement (as per AS 3) and ascertain the Cash and Cash Equivalent at the end of the year as on 31st March, 2019.

(Ignore Corporate Tax.)

7. Day Ltd., a newly formed company has applied to the Private Bank for the first time for financing its Working Capital Requirements. The following information are available about the projections for the current year: **[M18 (N) – 10M]**

Estimated Level of Activity	Completed Units of Production 31200 plus units of work in progress 12000
Raw Material Cost	Rs.40 per unit
Direct Wages Cost	Rs.15 per unit
Overhead	Rs.40 per unit (inclusive of Depreciation `10 per unit)
Selling Price	Rs.130 per unit
Raw Material in Stock	Average 30 days consumption
Work in Progress Stock	Material 100% and Conversion Cost 50%
Finished Goods Stock	24000 Units
Credit Allowed by the supplier	30 days
Credit Allowed to Purchasers	60 days
Direct Wages (Lag in payment)	15 days
Expected Cash Balance	Rs.2,00,000

Assume that production is carried on evenly throughout the year (360 days) and wages and overheads accrue similarly. All sales are on the credit basis.

You are required to calculate the Net Working Capital Requirement on Cash Cost Basis.

8. S Ltd. has furnished the following information for the year ending 31st March, 2018: **[M18 (O) – 5M]**

Particulars	**Amount (Rs.)**
Net profit before taxation	20,78,000
Depreciation charged to P&L Account	8,00,000
Profit on sale of plant & machinery	2,20,000
Increase in debtors	2,40,000
Decrease in stock	6,80,000
Decrease in other current liabilities	1,50,000
Increase in creditors	20,000
Purchases of plant and machinery	23,20,000
Proceeds from issue of share capital	15,00,000
Dividend paid	7,20,000
Income-tax paid	7,28,000

You are required to calculate cash from operating activities in accordance with AS-3.

9. A company is considering to engage a factor. The following information is available: **[M18 (O) – 8M]**

- The current average collection period for the company's debtors is 90 days and ½% of debtors default. The factor has agreed to pay money due after 60 days and will take the responsibility of any loss on account of bad debts.
- The annual charge for factoring is 2% of turnover. Administration cost saving is likely to be Rs.1,00,000 per annum.
- Annual credit sales are Rs.1,20,00,000. Variable cost is 80% of sales price. The company's cost of borrowing is 15% per annum. Assume 360 days in a year.

Should the company enter into a factoring agreement?

10. The current credit sales of a firm is 15 lakhs and the firm still has an unutilized capacity. In order to boost its sales, the firm is willing to relax its credit policy. **[N17 (O) – 8M]**

The firm proposes a new credit policy of 2/10 net 60 days as against the present policy of 1/10 net 45 days. The firm expects an increase in the sales by 12%. However, it is also expected that bad debts will go upto 2% of sales from 1.5%.

The contribution to sales ratio of the firm is 28%. The firm's tax rate is 30% and firm requires an after tax return of 15% on its investment.

Should the firm change the credit policy?

11. PQ Limited wants to expand its business and has applied for a loan 8 from a commercial bank for its growing financial requirements. The records of the company reveals that the company sells goods in the domestic market at a gross profit of 25% not counting depreciation as part of the cost of goods sold. **[M17 (O) – 8M]**

The following additional information is also available for you:

Particulars	Rs.
Sales-Home at one month's credit	1,20,00,000
Sales-Export at three months' credit (sale price 10% below home price)	54,00,000
Material used (suppliers extends two months credit)	45,00,000
Wages paid ½ month in arrear	36,00,000
Manufacturing Expenses (Cash) paid (one month in arrear)	54,00,000
Adm. Expenses paid one month in arrear	12,00,000
Income tax payable in four installments of which one falls in the next financial year	15,00,000

MASTER MINDS

The company keeps one month's stock of each of raw materials and finished goods and believes in keeping 10,00,000 available to it including the overdraft limit of 5.00,000 not yet utilized by the company. Assume a 15% margin for contingencies. Ignore the work-in- progress.

You are required to ascertain the requirement of the working capital of the company.

12. VK Co. Ltd. has total cash disbursement amounting Rs.22,50,000 in the year 2017 and maintains a separate account for cash disbursements. Company has an administrative and transaction cost on transferring cash to disbursement account Rs.15 per transfer. The yield rate on marketable securities is 12% per annum. **[M17 (O) – 5M]**

You are required to determine optimum cash balance according to William J Baumol Model.

13. Following information relates to ABC company for the year 2016: **[N16 (O) – 8M]**

i) Projected sales : **(Rs.in lakhs)**

Month	August	September	October	November	December
Sale	35	40	40	45	46

ii) Gross profit margin will be 20% on sale.

iii) 10% of projected sale will be cash on sale. Out of credit sale of each month, 50% will be collected in the next month and the balance will be collected during the second month following the month of sale.

iv) Creditors will be paid in the first month following credit purchase. There will be credit purchase only.

v) Wages and salaries will be paid on the first day of the next month. The amount will be Rs.3 lakhs each per month.

vi) Interim dividend of Rs.2 lakhs will be paid in December 2016.

vii) Machinery costing Rs.10 lakhs will be purchased in September 2016. Repayment by instalment of Rs. 50,000 p.m, will start from October 2016.

viii) Administrative expenses of Rs.1,00,000 per month will be paid in the month of their incurrence.

ix) Assume no minimum cash balance is required. Opening cash balance as on 01-10-2016 is estimated at Rs. 10 lakhs.

You are required to prepare the monthly cash budget for the 3 month period (October 2016 to December 2016).

14. A trader whose current sales are Rs. 4,20,000 per annum and an average collection period of 30 days, wants to pursue a more liberal policy to improve sales. A study made by a management consultant reveals the following information: **[M16 (O) – 8M]**

Credit Policy	Increase in Collection Period	Increase in Sales	Present default anticipated
I	10 days	Rs.21,000	1.5%
II	30 days	Rs. 52,500	3%
III	45 days	Rs.63,000	4%

The selling price per unit is Rs. 3. Average cost per unit is Rs. 2.25 and variable cost per unit is Rs. 2. The current bad-debts loss is 1%. Required return on additional investment is 20%. Assume a 360 days year.

Which of the above policies would you recommend for adoption?

MASTER MINDS

10.RATIO ANALYSIS

1. Following figures and ratios are related to a company Q Ltd:- [M19 (N) – 5M]

i.	Sales for the year (all Credit)	Rs. 30,00,000
ii.	Gross profit ratio	25%
iii.	Fixed assets turnover (based on cost of goods sold)	1.5
iv.	Stock turnover (based on cost of goods sold)	6
v.	Liquidity ratio	1:1
vi.	Current ratio	1.5:1
vii.	Receivable (Debtors) Collection period	2 months
viii.	Reserves and surplus to share capital	0.6:1
ix.	Capital gearing ratio	0.5
x.	Fixed assets to net worth	1.2:1

You are required to calculate:

Closing stock, fixed assets, current assets, Debtors and net worth.

2. Using the following given below, complete the Balance sheet of PQR Private Limited: **[M19 (O) – 8M]**

a)	Current ratio	1.6:1
b)	Cash and bank balance	15% of total current assets
c)	Debtors turnover ratio	12 times
d)	Stock turnover(Cost of goods sold) ratio	16 times
e)	Creditors turnover(Cost of goods sold) ratio	10 times
f)	Gross profit ratio	20%

g) Capital gearing ratio 0.6

h) Depreciation rate 15% on WDV

i) Net fixed assets 20% of total assets

(Assume all purchase and sales are on credit)

Balance sheet of PQR Private Limited As at 31.03.2019

Liabilities	Rs.	Assets	Rs.
Share capital	25,00,000	**Fixed Assets**	
Reserves & surplus	?	Opening WDV ?	
12% Long term debt	?	(-) Depreciation ?	?
Current liabilities		Current Assets	
Creditors ?		Stock ?	
Provisions & Out standing Expenses ?	68,50,000	Debtors ?	
		Cash and bank balance ?	?
Total	?	**Total**	?

3. The following is the information of XML Ltd. relate to the year ended 31-03-2018: **[N18 (N) – 5M]**

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 Rs.50,00,000

Assume that:

(i) No change in Non-Current Assets during the year 2017-18

(ii) No depreciation charged on Non-Current Assets during the year 2017-18. (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

MASTER MINDS

4. A Limited Company's books reveal following information: **[N18 (O) – 5M]**

Net Income	Rs.3,60,000
Shareholders' Equity	Rs.4,00,000
Assets Turnover	2.5 times
Net profit margin	12%

You are required to calculate ROE (Return on Equity) of the company based on the 'DuPont Model'.

5. The accountant of Moon Ltd. has reported the following data: **[M18 (N) – 5M]**

Gross profit Rs.60,000

Gross Profit Margin 20%

Total Assets Turnover 0.30:1

Net Worth to Total Assets 0.90:1

Current Ratio 1.50:1

Liquid Assets to Current Liability 1:1

Credit Sales to Total Sales 0.80:1

Average Collection Period 60 days

Assume 360 days in a year

You are required to complete the following:

Balance Sheet of Moon Ltd.

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Net Worth		Fixed Assets	
Current Liabilities		Stock	
		Debtors	
		Cash	
Total Liabilities		Total Assets	

6. G Ltd. has furnished the following information relating to the year ended 31st March, 2017 and 31st March, 2018: **[M18 (O) – 8M]**

Particulars	31st March, 2017	31st March, 2018
Share Capital	40,00,000	40,00,000
Reserve and Surplus	20,00,000	25,00,000
Long term loan	30,00,000	30,00,000

MASTER MINDS

- Net profit ratio: 8%
- Gross profit ratio: 20%
- Long-term loan has been used to finance 40% of the fixed assets.
- Stock turnover with respect to cost of goods sold is 4.
- Debtors represent 90 days sales.
- The company holds cash equivalent to 1½ months cost of goods sold.
- Ignore taxation and assume 360 days in a year.

You are required to prepare Balance Sheet as on 31st March, 2018 in following format:

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Share Capital		Fixed Assets	
Reserves & Surplus		Stock	
Long term Loan		Sundry Debtors	
Sundry Creditors		Cash	
Total Liabilities		Total Assets	

7. XY Ltd. provides the following information for the year ending 31st March, 2017: **[N17 (O) – 8M]**

Equity Share Capital Rs.8,00,000

Closing Stock Rs.1,50,000

Stock Turnover Ratio 5 times

Gross profit ratio 20%

Net profit/Sales 16%

Net profit/Capital 25%

You are required to prepare:

Trading and Profit & Loss Account for the year ending 31st March, 2017.

8. Following information relate to a concern: **[M17 (O) – 8M]**

Debtors Velocity	3 months
Credits Velocity	2 months
Stock Turnover Ratio	1.5
Gross Profit Ratio	25%
Bills Receivables	Rs. 25,000
Bills Payables	Rs.10,000
Gross Profit	Rs.4,00,000
Fixed Assets to turnover Ratio	4

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

Find out:

(i) Sales and cost of goods sold (ii) Sundry Debtors (iii) Sundry Creditors

(iv) Closing Stock (v) Fixed Assets

9. The following figures and ratios pertain to ABG Company Limited for the year ending 31st March, 2016:

Annual Sales (credit)	Rs. 50,00,000	**[N16 (O) – 8M]**
Gross Profit Ratio	28%	
Fixed assets turnover ratio (based on cost of goods sold)	1.5	
Stock turnover ratio (based on cost of goods sold)	6	
Quick ratio	1 : 1	
Current ratio	1.5	
Debtors collection period	45 days	
Reserves and surplus to Share Capital	0.60 : 1	
Capital gearing ratio	0.5	
Fixed Assets to net worth	1.2 : 1	

You are required to prepare the Balance Sheet as at 31st March, 2016 based on the above information. Assume 360 days in a year.

MASTER MINDS

10. With the following ratios and further information given below prepare a Trading Account, Profit and Loss Account and Balance Sheet of ABC Company. **[M16 (O) – 8M]**

Fixed Assets	Rs. 40,00,000
Closing stock	Rs. 4,00,000
Stock turnover ratio	10
Gross profit ratio	25 percent
Net profit ratio	20 percent
Net profit to capital	1/5
Capital to total liabilities	1/2
Fixed assets to capital	5/4
Fixed assets / Total current assets	5/7

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To **MASTER MINDS**, Guntur

THE END