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PREFACE TO THIS EDITION

CA INTER - FM FAST TRACK - PRACTICAL BOOK

Through the medium of this book, we present to you the **Financial Management** concepts in a refined and simplified manner. Each chapter has been covered through detailed questions to help in learning by practising. Effort has been done to write this book in a way which makes it easy to understand and remember.

I am thankful to God, my family, my friends and most importantly my students for always loving me and having faith in my hard work.

Also, the sincere effort, persistence and determination of our associated teachers, staff members, well Wishers and students are highly appreciated.

Every effort has been taken to avoid any errors / omissions, but errors are inevitable. Any mistake may kindly be brought to our notice and it shall be dealt with suitably.

We welcome your valuable suggestions and feedback in developing this book further.

As per ICAI

Under the Revised Scheme of Education and Training, at the **Intermediate Level**, **students are expected** not only to acquire professional knowledge but also to develop the ability to apply the knowledge in real-life business situations. The process of learning should also help the students in imbibing professional skills, i.e., the intellectual skills and communication skills, necessary for achieving the desired professional competence.

In our book

Every effort has been taken to present this subject in a manner that students are able to acquire the skill set as prescribed by ICAI.

The entire syllabus has been covered in two books.

Book 1 - Presents practical questions.

The concepts shall be covered in class and students will be able to acquire knowledge to solve questions.

We shall be doing about 55% of all the questions in class and the rest shall be given as homework.

The solution set for homework questions will be provided in soft copy in your batch.

Book 2 - Presents theory questions.

We will discuss these questions in separate theory classes.

You must read theory well to be able to write theoretical answers and solve MCQs

Multiple Choice Questions (MCQs) will be presented on our WWW.CANITINGURU.COM

Thank You !!

CA. Nitin Guru

ABOUT THE AUTHOR

CA Nitin Guru is a Post Graduate in Commerce & a Member of The Institute of Chartered Accountants of India.

- He is the lead trainer for various courses for Costing and Financial management at **CA NITIN GURU CLASSES**.
- He is a First Class Graduate from Delhi College of Arts and Commerce.
- He is a College Topper & a Gold Medallist.
- His areas of specialisation are Cost & Management Accounting, Financial Management, Economics for Finance and Strategic Financial Management.
- At a young age, he has amassed vast experience of teaching over 60,000 students.
- His style of teaching, techniques and guidelines for preparing for examination are well accepted & acknowledged by all the students. His friendly and interactive approach makes him popular amongst the students.
- He has maintained a very high passing rate. He has been a Visiting Faculty to various Professional Institutes & MBA Colleges in the past.

CLASS ATTRACTIONS

- Start the topic from the base.
- Explains reasons and logic inbuilt behind concepts and has a unique method of making students understand them.
- Real life examples make classes interesting & lively.

CLASSES AVAILABLE ON WWW.CANITINGURU.COM

- CA Inter - Cost & Management Accounting (Regular & Fast Track)
- CA Inter - Financial Management (Regular & Fast Track)
- CA Final - Advanced Financial Management (Regular & Fast Track)

Thank You !!
CA Nitin Guru

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CA INTER - FM REGULAR COURSE PRACTICAL BOOK

Chapter 1
Financial Analysis & Planning - Ratio Analysis

TYPES OF RATIO

I. PROFITABILITY RATIOS BASED ON SALES:

These ratios measure how efficiently a company has generated profit on sales and investment.

(i) Gross Profit Ratio= $\frac{Gross\ Profit}{Net\ Sales}$(In %)

- **Gross Profit** = Gross Profit as per Trading Account.
- **Sales** = Sales net of returns.

Significance = Indicator of Basic Profitability.

(ii) Operating Profit Ratio= $\frac{Operating\ Profit}{Net\ Sales}$ (In %)

- **Operating Profit** = Sales Less Cost of Sales

[OR]

= Net Profit as per P & L Account
(+) Non-Operating Expenses (e.g. Loss on sale of assets, preliminary Expenses written off, etc.)
(-) Non-Operating Income (e.g. Rent, Interest & Dividends received)

- **Sales** = Sales net of returns.

Significance = Indicator of Operating Performance of business.

(iii) Net Profit Ratio= $\frac{Net\ Profit}{Net\ Sales}$ (In %)

- **Net Profit** = Net profit as per P & L A/c (either before tax or after tax, depending upon data).
- **Sales** = Sales net of returns.

Significance= Indicator of Overall Profitability.

(iv) Contribution Sales Ratio [or] Profit Volume Ratio = Contribution/ Sales

- **Contribution** = Sales Less Variable Costs.
- **Sales** = Sales net of returns.

Significance = Indicator of Profitability in Marginal Costing.

II. COVERAGE RATIOS:

The soundness of a firm, from the view point of long term creditors & Preference shares, lays its ability to service their client.

(i) Debt Service Coverage Ratio=$\frac{Earnings\ for\ Debt\ Service}{(Interest + Instalment)}$ (In Times)

- **Earnings for Debt Service** = Net Profit after Taxation
  (+) Interest on Debt Funds
  (+) Non-Cash Operating Expenses(e.g. depreciation & amortizations)
  (+) Non-Operating Items/Adjustments (e.g. Loss on sale of Fixed Assets,etc.)
- **Interest + Instalment** = Interest + Principal, i.e.
  Interest on Debt
  (+)Instalment of Loan Principal

Significance =Indicates extent of current earnings available for meeting commitments of interest and instalment. Ideal Ratio must be between 2 to 3 times.

(ii) Interest Coverage Ratio= $\frac{EBIT}{Interest}$ (In Times)

- **EBIT** = Earnings before Interest and Tax.
- **Interest** = Interest on Debt

Significance = Indicates ability to meet interest obligations of the current year. Should be greater than 1.

(iii) Preference Dividend Coverage Ratio=$\frac{EAT}{Preference\ Dividend}$ (In Times)

- **EAT** = Earnings after Tax.
- **Preference Dividend** = Dividend on Preference Capital.

Significance = Indicates ability to pay dividend on Preference Capital. Should be greater than 1.

III. TURNOVER/ACTIVITY/PERFORMANCE RATIOS

These ratios show how efficiently a company is using its assets to generate sales, e.g. Fixed Assets Turnover ratio, Debtor Turnover ratio etc.

(i) Raw Material Turnover Ratio = $\frac{Cost\ of\ Raw\ Material\ Consumed}{Average\ Stock\ of\ Raw\ Material}$ (In Times)

- **Cost of Raw Material Consumed** = Opening Stock of Raw Materials
  (+) Purchases of Raw Materials
  (-) Closing Stock of Raw Materials
- **Average Stock of Raw Material** =$\frac{(Opening\ RM\ Stock + Closing\ RM\ Stock)}{2}$

Significance = Indicates how fast/regularly Raw Materials are used in production.

(ii) WIP Turnover Ratio=$\frac{Factory\ cost}{Average\ Stock\ of\ WIP}$ (In Times)

- **Factory Cost** = Materials Consumed + Wages + POH
- **Average Stock of WIP** = $\frac{(Opening\ WIP + Closing\ WIP)}{2}$

Significance = Indicates the WIP movement/production cycle.

(iii) Finished Goods or Stock Turnover Ratio = $\frac{Cost\ of\ Goods\ Sold}{Average\ Stock\ of\ Finished\ Goods}$(In Times)

- **Cost of Goods Sold** =
  (a) For Manufacturers: OpeningStock of FG (+)Cost of Production (-) Closing Stock of FG.
  (b) For Traders: Opening Stock of FG + Cost of Goods Purchased (-) Closing Stock of FG.
- **Average Stock of Finished Goods** =$\frac{(Opening\ FG\ Stock + Closing\ FG\ Stock)}{2}$

Significance =Indicates how fast inventory is used/sold. High Turnover shows fast moving FG. Low Turnover may mean dead or excessive stock.

(iv) Debtors Turnover Ratio=$\frac{Credit\ Sales}{Average\ Account\ Receivable}$ (In Times)

- **Credit Sales** = Credit Sales net of returns
- **Average Accounts Receivable** = Average Accounts Receivable (i.e. Debtors + B/R)
  $\frac{(Opening\ Drs\ \&\ B/R + Closing\ Drs\ \&\ B/R)}{2}$

Significance = Indicates the speed of collection of Credit Sales/Debtors.

(v) Creditors Turnover Ratio= $\frac{Credit\ Purchases}{Average\ Accounts\ Payable}$(In Times)

- **Credit Purchases** = Credit Purchases net of returns
- **Average Accounts Payable** = Average Accounts Payable (i.e. Creditors + B/P)
  $\frac{(Opening\ Crs\ \&\ B/P + Closing\ Crs\ \&\ B/P)}{2}$

(vi) Working Capital Turnover Ratio=$\frac{Turnover\ (Net\ Sales)}{Net\ Working\ Capital}$ (In Times)

[Also called Operating Turnover (or) Cash Turnover Ratio]

- **Turnover** = Sales net of returns
- **Net Working Capital** = Current Assets Less: Current Liabilities
  (Average of Opening and Closing balances may be taken)

Significance = Ability to generate sales per rupee of Working Capital.

(vii) Fixed Assets Turnover Ratio=$\frac{Turnover}{Net\ Fixed\ Assets}$ (In Times)

- **Turnover** = Sales net of returns
- **Net Fixed Assets** = Net Fixed Assets **(Average of Opening and Closing balances may be taken)**

Significance = Ability to generate sales per rupee of Fixed Assets.

(viii)Capital Turnover Ratio = $\frac{Turnover}{Capital\ Employed}$ (In Times)

- **Turnover** = Sales net of returns
- **Capital Employed** = **(Average of Opening and Closing balances may be taken)**

Significance = Ability to generate sales per rupee of long-term Investment.

ALSO STUDY CONCEPT OF DEBTOR, CREDITORS & STOCK VELOCITY

IV. CAPITAL STRUCTURE RATIOS

These ratios measure the extent to which a company which has been financed by long term debt obligations like Debt equity ratio. It measures the ability of an enterprise to survive over a long period of time.

(i) Debt to Total Assets Ratio =$\frac{Total\ Debt}{Total\ Assets}$

- **Debt** = Borrowed Funds (or) Loan Funds
  = Debentures + Long-Term Loans from Banks, Financial Institutions, etc.

(ii) Debt Ratio =$\frac{Total\ Debt}{Net\ Assets}$

- **Total debt** includes both long term and short term debt.

(iii) Equity to Total Funds Ratio =$\frac{Equity}{Total\ Funds}$

- **Equity** = Net Worth (or) Shareholders' Funds (or) Proprietors' Funds (or) Owners' Funds (or) Own Funds
  = Equity Share Capital + Preference Share Capital + Reserves & Surplus **Less:** Miscellaneous Expenditure (as per Balance Sheet) and Accumulated Losses.
- **Total Funds** = Long Term Funds (or) Capital Employed (or) Investment
  = Debt + Equity.....Liability Route
  = Fixed Assets + Net Working Capital .....Assets Route

Significance = Indicates Long Term Solvency, mode of financing and extent of own funds used in operations. Ideal Ratio is 33%.

(iv) Equity Ratio =$\frac{Shareholders\ Equity}{Net\ Assets}$

(v) Debt – Equity Ratio = $\frac{Total\ Debt}{Equity}$ OR $\frac{Long\ term\ Debt}{Equity}$

- **Long term Debt** = Borrowed Funds (or) Loan Funds = Debentures + Long-Term Loans from Banks, Financial Institutions, etc.
- **Equity** = Net Worth (or) Shareholders' Funds (or) Proprietors' Funds (or) Owners' Funds (or) Own Funds
  = Equity Share Capital + Preference Share Capital + Reserves & Surplus **Less:** Miscellaneous Expenditure (as per Balance Sheet) and Accumulated Losses.

Significance = Indicates the relationship between Debt & Equity. Ideal Ratio is 2:1.

(vi) Capital Gearing Ratio = $\frac{Preference\ Capital + Debentures + other\ borrowed\ funds}{Equity\ Shareholders\ Funds}$

- **Preference Capital + Debentures + Other borrowed funds** = Preference Share Capital and Debt i.e. Debentures + Long-Term Loans from Banks, Financial Institutions, etc.
- **Equity Shareholders Funds** = Equity Share Capital Less Preference Share Capital i.e.
  = Equity Share Capital + Reserves & Surplus **Less:** Miscellaneous Expenditure (as per Balance Sheet) and Accumulated Losses.

Significance = Show proportion of Fixed Charge (Dividend or Interest) Bearing Capital to Equity Funds, and the extent of advantage or leverage enjoyed by Equity Shareholders.

(vii) Proprietary Ratio = $\frac{Proprietary\ Funds}{Total\ Assets}$

- **Proprietary Funds** = Net Worth (or) Shareholders' Funds (or) Proprietors' Funds (or) Owners' Funds (or) Own Funds
  = Equity Share Capital + Preference Share Capital + Reserves & Surplus **Less:** Miscellaneous Expenditure (as per Balance Sheet) and Accumulated Losses.
- **Total Assets** = Net Tangible Fixed Assets (+) Total Current Assets

Significance = Shows extent of Owner's Funds, i.e. Shareholders' Funds utilised in financing the assets of the business.

(viii) Fixed Asset to Long Term Fund Ratio = $\frac{Fixed\ Assets}{Long\ Term\ Funds}$

- **Fixed Assets** = Net Fixed Assets, i.e. Gross Block (-) Depreciation
- **Long Term Funds** = Debt + Equity.....Liability Route
  = Fixed Assets + Net Working Capital .....Assets Route

Significance= Shows proportion of Fixed Assets (Long-Term Assets) financed by long-term funds. Indicates the financing approach followed by the Firm, i.e. Conservative, Matching or Aggressive. Ideal Ratio is less than one.

V. LIQUIDITY RATIO

These ratios show a company's ability to meet its short term financial obligation like current ratio and quick ratio.

(i) Current Ratio=$\frac{Current\ Assets}{Current\ Liabilities}$

- **Current Assets** = Inventories/Stocks
  (+) Debtors & B/R
  (+) Cash & Bank
  (+) Receivables
  (+) Accruals
  (+) Short Term Loans
  (+) Marketable Investments/Short Term Securities
- **Current Liabilities** = Sundry Creditors
  (+) Outstanding Expenses
  (+) Short Term Loans & Advances (Cr.)
  (+) Bank Overdraft/Cash Credit
  (+) Provision for Taxation
  (+) Proposed Dividend
  (+) Unclaimed Dividend

Significance = Ability to repay short-term liabilities promptly. Ideal Ratio is 2:1. Very high Ratio indicates the existence of idle Current Assets.

(ii) Quick Ratio = Quick Assets / Current Liabilities (Also called Liquid Ratio [or] Acid Test Ratio)

- **Quick Assets** = Current Assets
  (-) Inventories
  (-) Prepaid Expense

Significance = Ability to meet immediate liabilities. Ideal Ratio is 1:1

(iii) Absolute Cash Ratio [or] Cash Ratio [or] Absolute Liquidity Ratio =$\frac{Cash + Marketable\ Securities}{Current\ Liabilities}$

- **Cash + Marketable Securities** = Cash in Hand
  (+) Cash at Bank (Dr)
  (+) Marketable Investments/Short Term Securities(current investments)

Significance = Availability of cash to meet short-term commitments. No ideal ratio as such. If Ratio > 1, it indicates very liquid resources, which are low in profitability.

(iv) Basic Defence Interval Measure= $\frac{Quick\ Assets}{Cash\ Expenses\ per\ day}$(In days)

- **Quick Assets** = Current Assets
  (-) Inventories
  (-) Prepaid Expenses
- **Cash Expenses per Day** =$\frac{Annual\ Cash\ Expenses}{365}$

Cash Operating Expenses = COGS + Selling admin other expenses (excluding depreciation and non cash exp)
Cash Expenses = Total Expenses (-) Depreciation & write-offs.
Significance= Ability to meet regular Cash Expenses.

VI. OVERALL RETURN RATIOS - OWNER VIEW POINT

(i) Return on Investment (ROI) [or] Return on Capital Employed (ROCE) =

- Pre-tax ROCE: =$\frac{EBIT}{Capital\ Employed}$
- Post-tax ROCE: =$\frac{EBIT(1-t)}{Capital\ Employed}$ = $\frac{Eat+Interest}{Capital\ Employed}$
  - ❖ Either pre-tax or post-tax ROCE may be computed.
  - ❖ Pre-tax ROCE is generally preferred for analysis purposes.
  - ❖ Capital Employed = Investment
    = Equity + Debt

  Significance = Overall profitability of the business on the Total Funds Employed.

(ii) Return on Net Worth (RONW) =

- Pre-tax RONW: =
- Post – tax RONW: =
  - ❖ Either pre-tax or post-tax ROE may be computed.
  - ❖ Post-tax ROE is generally preferred for analysis purposes.
  - ❖ Equity (or) Net Worth (or) Shareholders' Funds (or) Proprietors' Funds (or) Owners' Funds (or) Own Funds

  Significance = Indicates profitability of Equity Funds/Owner's Funds invested in the business.

(iii) Return on Assets (ROA) =

- Pre-tax ROA: = $\frac{EBT}{Average\ Total\ Assets}$
- Post-tax ROA: =$\frac{EAT+Interest}{Average\ Total\ Assets}$ or $\frac{EBT(1-T)}{Average\ Total\ Assets}$
  - ❖ Either pre-tax or post-tax ROA may be computed.
  - ❖ Pre-tax ROA is generally preferred for analysis purposes.
  - ❖ Average, i.e. ½ of Opening & Closing Balances of any of the following items –
    (a) Total Assets, (or)
    (b) Tangible Assets, (or)
    (c) Fixed Assets.

  Significance = Indicates Net Income per rupee of Average Total Assets or Tangible or Fixed Assets.

(iv) Earnings per Share (EPS) =$\frac{Residual\ Earnings}{Number\ of\ Equity\ Shares}$

- Residual Earnings, i.e. EAT (-) Preference Dividend
- Number of Equity Shares outstanding =$\frac{Equity\ Capital}{Face\ Value\ per\ Share}$

  Significance = Income per share, whether or not distributed as dividends.

(v) Dividend per share(DPS) =$\frac{Total\ Equity\ Dividend}{Number\ of\ Equity\ Shares}$

- Profits distributed to Equity Shareholders.
  Significance= Profits distributed per Equity Share.

(vi) Price Earnings Ratio (PE Ratio) $= \frac{Market\ Price\ per\ Share}{Earnings\ per\ share}$

- Average Market price (or closing Market price) as per Stock Exchange quotations. (Market price per share = MPS)

Significance = Indicates relationship between MPS and EPS, and Shareholders' perception of the Company.

(vii) Dividend Yield (%) $= \frac{Dividend}{Market\ price\ per\ share}$

- Average MPS (or Closing MPS) as per stock Exchange quotations.

Significance = True return on Investment, based on Market Value on Market Value of Shares.

(viii) Book Value per Share $= \frac{ESHF}{Number\ of\ Equity\ Shares}$

- Number of Equity Shares outstanding $= \frac{Equity\ Capital}{Face\ value\ per\ share}$

Significance= Basis of Valuation of Shares based on Book Values.

(ix) Market Value to Book Value$= \frac{Market\ Price\ per\ Share}{Book\ Value\ per\ Share}$

- Average MPS (or Closing MPS) as per stock Exchange quotations.

Significance= Higher ratio indicates better position for Shareholders in terms of return & capital gains.

(x) Q Ratio $= \frac{Market\ Value\ of\ equity\ and\ liabilities}{Estimated\ replacement\ cost\ of\ assets}$ or $\frac{Market\ Value\ of\ Company}{Asset\ Replacement\ Cost}$

PRACTICAL PROBLEMS

Calculate values from Ratios

Question 1 - Rtp

FM Ltd. is in a competitive market where every company offers credit. To maintain the competition, FM Ltd. sold all its goods on credit and simultaneously received the goods on credit.

The company provides the following information relating to current financial year:

Debtors Velocity	3 months
Creditors Velocity	2 months
Stock Turnover Ratio (on Cost of Goods Sold)	1.5
Fixed Assets turnover Ratio (on Cost of Goods Sold)	4
Gross Profit Ratio	25%
Bills Receivables	₹ 75,000
Bills Payables	₹ 30,000
Gross Profit	₹ 12,00,000

FM Ltd. has the tendency of maintaining extra stock of ₹ 30,000 at the end of the period than that at the beginning. **DETERMINE:**

(i) Sales and cost of goods sold
(ii) Sundry Debtors
(iii) Closing Stock
(iv) Sundry Creditors
(v) Fixed Assets

Question 2 - Pyq

From the information given below **calculate** the amount of Fixed assets and Proprietor's Funds

Ratio of fixed assets to Proprietors Funds : 0.75
Net working capital : ₹ 6,00,000

Question 3 - Pyq

Following information relates to a firm:

Current ratio : 1.5 : 1
Inventory Turnover Ratio (Based on COGS) : 8
Sales : ₹ 40,00,000
Working capital : ₹ 2,85,000
Gross Profit Ratio : 20%

You are required to **find out:**

(i) The value of the opening stock presuming that the closing stock is ₹ 40,000 more than the opening stock.

(ii) The value of Bank overdraft, presuming that the Bank overdraft and other current liabilities are in a ratio of 2 : 1

Calculate Ratios

Question 4 - Pyq

MN Limited gives you the following information related for the year ending 31st March, 2009:

(1)	**Current Ratio**	: 2.5 : 1
(2)	**Debt – Equity Ratio**	: 1: 1.5
(3)	**Return on Total Assets**	: 15%
(4)	**Total Assets Turnover Ratio**	: 2
(5)	**Gross Profit Ratio**	: 20%
(6)	**Stock Turnover Ratio**	: 7
(7)	**Current Market Price per Equity Share**	: ₹ 16
(8)	**Net Working Capital**	: ₹ 4,50,000
(9)	**Fixed Assets**	: ₹ 10,00,000
(10)	**60,000 Equity Shares of**	: ₹ 10 each
(11)	**20,000, 9% Preference shares of**	: ₹ 10 each
(12)	**Opening Stock**	: ₹ 3,80,000

You are required to **calculate:**

(a) Quick Ratio
(b) Fixed assets Turnover Ratio
(c) Proprietary Ratio
(d) Earnings per share
(e) Price Earnings Ratio.

Question 5 - Study Material

Additional information: Equity shares 80,000 @ 10 each ₹ 8,00,000 & 9% Preference shares of ₹ 3,00,000, Profit (after tax at 35 per cent), ₹ 2,70,000; Depreciation, ₹ 60,000; Equity dividend paid, 20 percent; Market price of equity shares, ₹ 40. You are required to **compute** the following, showing the necessary workings:

(a) Dividend Yield on the Equity Shares
(b) Cover for the Preference and Equity Dividends
(c) Earnings per Share
(d) Price-earnings Ratio.

Question 6 -

Excellence Ltd. has the following data for projections for the next five years. It has an existing Term Loan of ₹ 360 lakhs repayable over next five years and has got sanctions for a new term loan for ₹ 500 lakhs which is also repayable in five years. As a Finance Manager you are required to **calculate:**

(i) Interest Service coverage ratio and
(ii) Debt Service Coverage Ratio

Particulars	Amount(₹ in Lakhs)
Profit after tax	480
Depreciation	155
Taxation	125
Interest on Term Loans	162
Repayment of Term Loans	178

Prepare Balance sheet

Question 7 - Pyq

Following are the data in respect of ABC Industries for the year ended 31st March, 2021:

Debt to Total assets ratio	: 0.40
Long-term debts to equity ratio	: 30%
Gross profit margin on sales	: 20%
Accounts receivable period	: 36 days
Quick ratio	: 0.9
Inventory holding period	: 55 days
Cost of goods sold	: ₹ 64,00,000

Liabilities	₹	Assets	₹
Equity Share Capital	20,00,000	Fixed assets	
Reserves & Surplus		Inventories	
Long-term debts		Accounts receivables	
Accounts payable		Cash	
Total	50,00,000	Total	

Complete the Balance Sheet of ABC Industries as on 31st March, 2021. All calculations should be in the nearest Rupee. Assume 360 days in a year.

Question 8 - Study Material

Using the following information, **complete** this balance sheet:

Long-term debt to net worth	0.5 to 1
Total asset turnover	2.5 times
Average collection period*	18 days
Inventory turnover	9 times
Gross profit margin	10%
Acid-test ratio	1 to 1

*Assume a 360-day year and all sales on credit.

Liabilities	₹	Assets	₹
Notes and payables	1,00,000	Cash	-
Long-term debt	-	Accounts receivable	-
Common stock	1,00,000	Inventory	-
Retained earnings	1,00,000	Plant and equipment	-
Total liabilities and equity	-	Total assets	-

Question 9 -

From the following particulars **prepare** the Balance Sheet of Krishna Ltd.

Current Ratio	2
Working Capital	₹ 2,00,000
Capital Block to Current Assets	3:2
Fixed Assets to Turnover	1:3
Sales Cash/Credit	1:2
Creditors Velocity	2 months
Stock Velocity	2 months
Debtors Velocity	3 months
Capital Block:	
Net profit –	10% of turnover
Reserve –	2 1/2% of turnover
Debenture/Share Capital –	1:2
Gross Profit Ratio –	25% (of sales)

Question 10 - Study Material

From the following information, you are required to **PREPARE** a summarised Balance Sheet for Rudra Ltd. for the year ended 31st March, 2023:

Debt Equity Ratio	1:1
Current Ratio	3:1
Acid Test Ratio	8:3
Fixed Asset Turnover (on the basis of sales)	4
Stock Turnover (on the basis of sales)	6
Cash in hand	₹ 5,00,000
Stock to Debtor	1:1
Sales to Net Worth	4
Capital to Reserve	1:2
Gross Profit	20% of Cost
COGS to Creditor	10:1

Interest for the entire year is yet to be paid on a Long Term loan @ 10%.

Question 11 -

Below is given the balance Sheet of A Ltd. as on 31st March,2001 –

Liabilities	₹	Assets		₹
Share Capital:		**Fixed Assets:**		
14% Preference Shares	1,00,000	**At Cost**	**5,00,000**	
Equity Shares	2,00,000	**Less: Depreciation**	**- 1,60,000**	3,40,000
General Reserves	40,000	**Stock in trade**		60,000
12% Debentures	60,000	**Sundry Debtors**		80,000
Current Liabilities	1,00,000	**Cash**		20,000
Total	**5,00,000**	**Total**		**5,00,000**

The following information is available. **Prepare** the forecast Balance Sheet as on 31st March 2002.
(1) Fixed assets costing ₹ 1,00,000 to be installed on 1st April 2001 & would become operative on that date, payment is required to be made on 31st March2002.
(2) The Fixed Assets-Turnover Ratio would be 1.5 (on the basis of cost of Fixed Assets).
(3) The Stock-Turnover Ratio would be 14.4 (on the basis of the opening & closing stock).
(4) The break-up of cost and Profit would be as follows: Materials – 40%, Labour – 25%, Manufacturing Expenses – 10%, Office and Selling Expenses – 10% , Depreciation – 5%, Profit – 10% and Sales – 100% .The Profit is subject to interest & taxation at 50%.
(5) Debtors would be 1/9th of Sales while Creditors would be 1/5th of Materials Cost.
(6) A Dividend at 10% would be paid on Equity Shares in March 2002.
(7) ₹ 50,000, 12% Debentures were issued on 1st April 2001.

Question 12 - Rtp

From the following information, **find out** missing figures and **REWRITE** the balance sheet of Mukesh Enterprise.

Current Ratio : 2:1
Acid Test ratio : 3:2
Reserves and surplus : 20% of equity share capital
Long term debt : 45% of net worth
Stock turnover velocity : 1.5 months
Receivables turnover velocity : 2 months
You may assume closing Receivables as average Receivables.
Gross profit ratio : 20%
Sales is ₹ 21,00,000 (25% sales are on cash basis and balance on credit basis)
Closing stock is ₹ 40,000 more than opening stock.
Accumulated depreciation is 1/6 of the original cost of fixed assets.
Balance sheet of the company is as follows:

Liabilities	(₹)	Assets	(₹)
Equity Share Capital	?	Fixed Assets (Cost)	?
Reserves & Surplus	?	Less: Accumulated. Depreciation	?
Long Term Loans	6,75,000	Fixed Assets (WDV)	?
Bank Overdraft	60,000	Stock	?
Creditors	?	Debtors	?
		Cash	?
Total	?	Total	?

Prepare P&L account and Balance Sheet

Question 13 - Study Material

VRA Limited has provided the following information for the year ending 31st March 2015:

Debt Equity Ratio : 2:1
14% long term debt : ₹ 5,00,000
Gross Profit Ratio : 30%
Return on equity : 50%
Income Tax Rate : 35%
Capital Turnover Ratio : 1.2 times
Opening Stock : ₹ 4,50,000
Closing stock : 8% of sales

You are required to **prepare** a Trading and Profit and Loss Account for the year ending 31st March, 2015.

Question 14 - Study Material

Ganpati Limited has furnished the following ratios and information relating to the year ended 31st March, 2010:

Sales	₹ 60,00,000
Return on Net Worth	25%
Rate of Income Tax	50%
Share Capital to Reserves	7:3
Current Ratio	2
Net Profit to Sales	6.25%
Inventory Turnover (based on Cost of goods sold)	12
Cost of goods sold	₹ 18,00,000
Interest on Debentures	₹ 60,000
Sundry Debtors	₹ 2,00,000
Sundry Creditors	₹ 2,00,000

You are required to:

(a) Calculate the operating expenses for the year ended 31st March, 2010.

(b) Prepare a balance sheet as on 31st March in the following format:

Balance Sheet as on 31st March, 2010

Liabilities	₹	Assets	₹
Share Capital	-	**Fixed Assets**	-
Reserve and Surplus	-	**Current Assets**	
15% Debentures	-	**Stock**	-
Sundry Creditors	-	**Debtors**	-
		Cash	-

Question 15 - Rtp

The following information of ASD Ltd. relate to the year ended 31st March, 2022:

Net profit	: 8% of sales
Raw materials consumed	: 20% of Cost of Goods Sold
Direct wages	: 10% of Cost of Goods Sold
Stock of raw materials	: 3 months' usage
Stock of finished goods	: 6% of Cost of Goods Sold
Gross Profit	: 15% of Sales
Debt collection period	: 2 Months (All sales are on credit)
Current ratio	: 2 : 1
Fixed assets to Current assets	: 13 : 11
Fixed assets to sales	: 1 : 3
Long-term loans to Current liabilities	: 2 : 1
Capital to Reserves and Surplus	: 1 : 4

You are required to **PREPARE-**

Profit & Loss Statement of ASD Limited for the year ended 31st March, 2022 in the following format.

Particulars	(₹)	Particulars	(₹)
To Direct Materials consumed	?	**By Sales**	?
To Direct Wages	?		
To Works (Overhead)	?		
To Gross Profit c/d	?		
	?		?
To Selling and Distribution Expenses	?	**By Gross Profit b/d**	?
To Net Profit	?		
	?		?

Balance Sheet as on 31st March, 2022 in the following format.

Liabilities	(₹)	Assets	(₹)
Share Capital	?	**Fixed Assets**	1,30,00,000
Reserves and Surplus	?	**Current Assets:**	
Long term loans	?	**Stock of Raw Material**	?
Current liabilities	?	**Stock of Finished Goods**	?
		Debtors	?
		Cash	?

	?		?	

Taking averages in denominator

Question 16 - Study Material

In a meeting held at Solan towards the end of 2009, the Directors of M/s HPCL Ltd. has taken a decision to diversify. At present HPCL Ltd. sells all finished goods from its own warehouse.
The company issued debentures on 01.01.2010 and purchased fixed assets on the same day.
The purchase prices have remained stable during the concerned period.
Following information is provided to you:

INCOME STATEMENTS

Particulars		2009 (₹)		2010 (₹)
Cash Sales	30,000		32,000	
Credit Sales	2,70,000	3,00,000	3,42,000	3,74,000
Less: Cost of goods sold		2,36,000		2,98,000
Gross profit		64,000		76,000
Less: Expenses				
Warehousing	13,000		14,000	
Transport	6,000		10,000	
Administrative	19,000		19,000	
Selling	11,000		14,000	
Interest on Debentures		49,000		57,000
Net Profit		15,000		19,000

BALANCE SHEET

Particulars		2009 (₹)		2010 (₹)
Fixed Assets (Net Block)	-	30,000	-	40,000
Debtors	50,000		82,000	
Cash at Bank	10,000		7,000	
Stock	60,000		94,000	
Total Current Assets (CA)	1,20,000		1,83,000	
Creditors	50,000		76,000	
Total Current Liabilities (CL)	50,000		76,000	
Working Capital (CA – CL)		70,000		1,07,000
Total Assets		**1,00,000**		**1,47,000**
Represented by:				
Share Capital		75,000		75,000
Reserve and Surplus		25,000		42,000
Debentures		-		30,000
		1,00,000		**1,47,000**

You are required to **calculate** the following ratios for the years 2009 and 2010.
(i) Gross Profit Ratio
(ii) Operating Expenses to Sales Ratio
(iii) Operating Profit Ratio
(iv) Capital Turnover Ratio
(v) Stock Turnover Ratio
(vi) Net Profit to Net Worth Ratio, and
(vii) Debtors Collection Period.
Ratio relating to capital employed should be based on the capital at the end of the year. Give the reasons for change in the ratios for 2 years. Assume opening stock of ₹ 40,000 for the year 2009. Ignore Taxation.

DUPONT ANALYSIS

Question 17 - Study Material

XYZ Company's details are as under:
Revenue: ₹ 29,261; Net Income: ₹ 4,212; Assets: ₹ 27,987: Shareholders' Equity: ₹ 13,572. **Calculate** return on equity.

Question 18 -

Particulars	Amount (₹)
Return	80,000
Sales	3,00,000
Capital Employed	2,25,000

Compute (a) Capital Turnover Ratio, **(b)** Net Operating Profit ratio and **(c)** Applying Du Pont analysis state the relationship between the two.

Question 19 -

Compute the Return on Capital Employed from the following data relating to company A and B applying Du Pont analysis:-

Particulars	Ram Ltd	Shyam Ltd
Gross Profit Margin	30%	₹ 1,80,000 (15%)
Capital Employed	Nil	₹ 2,00,000
Turnover on Capital Employed	4 Times	Nil
Net Sales for the year	₹ 10,00,000	Nil
Operating Profit on Sales	5%	6%

Margin of safety topic

Question 20 - Mtp

Jensen and Spencer pharmaceutical is in the business of manufacturing pharmaceutical drugs including the newly invented Covid vaccine. Due to the increase in demand of Covid vaccines, the production has increased to an all time high level and the company urgently needs a loan to meet the cash and investment requirements. It had already submitted a detailed loan proposal and project report to Expo-Impo bank, along with the financial statements of previous three years as follows:

Statement of Profit and Loss (in '000)

Particulars	2018-19	2019-20	2020-21
Sales			
Cash	400	960	1,600
Credit	3,600	8,640	14,400
Total Sales	4,000	9,600	16,000
Cost of goods sold	2,480	5,664	9,600
Gross profit	1,520	3,936	6,400
Operating Expenses			
General, administration, and selling expenses	160	900	2,000
Depreciation	200	800	1,320
Interest expenses (on borrowings)	120	316	680
Profit before tax (PBT)	1,040	1,920	2,400
Tax@ 30%	312	576	720
Profit after tax (PAT)	728	1,344	1,680

Balance Sheet (In '000)

	2018-19	2019-20	2020-21
Assets			
Non-Current Assets			
Fixed Assets (net of depreciation)	3,800	5,000	9,400
Current Assets			
Cash and Cash equivalents	80	200	212
Accounts receivable	600	3,000	4,200
Inventories	640	3,000	4,500
Total	5,120	11,200	18,312
Equity & Liabilities			
Equity Share capital (shares of ₹ 10 each)	2,400	3,200	4,000
Other Equity	728	2,072	3,752
Non-Current borrowings	1,472	2,472	5,000
Current Liabilities	520	3,456	5,560
Total	**5,120**	**11,200**	**18,312**

Industry Average of Key ratios

Ratio	Sector Average
Current ratio	2.30:1
Acid test ratio (quick ratio)	1.20:1
Receivable Turnover ratio	7 times
Inventory turnover ratio	4.85 times
Long-term debt to total debt	24%
Debt-to-equity ratio	35%
Net profit ratio	18%
Return on total assets	10%
Interest coverage ratio (times interest earned)	10

As a loan officer of Expo-Impo Bank, you are required to **appraise the loan** proposal on the basis of comparison with industry average of key ratios considering balance for accounts receivable of ₹ 6,00,000 and inventories of ₹ 6,40,000 respectively as on 31st March, 2018.

Chapter 2
Cost of Capital

Cost of Debt

Question 1 - Study Material

A company issued 10,000, 10% debentures of ₹ 100 each at par on 1.4.2012 to be matured on 1.4.2022. The company wants to know the cost of its existing debt on 1.4.2017 when the market price of the debentures is ₹ 80. **COMPUTE** the cost of existing debentures assuming 35% tax rate.

Question 2 - Pyq

A Company issues ₹ 10,00,000 12% debentures of ₹ 100 each. The debentures are redeemable after the expiry of a fixed period of 7 years. The Company is in the 35% tax bracket. Required:

(i) **Calculate** the cost of debt after tax, if debentures are issued at
(a) Par; **(b)** 10% Discount; **(c)** 10% Premium.

(ii) If brokerage is paid at 2%, **what** will be the cost of debentures, if the issue is at par?

Zero coupon / Deep discount bonds

Question 3 - Study Material , MTP

(A) Institutional Development Bank(IDB) issued Zero interest deep discount bonds of face value of ₹1,00,000 each issued at ₹2500 & repayable after 25 years.
COMPUTE the cost of debt if there is no corporate tax.

(B) Development Finance Corporation issued zero interest deep discount bonds of face value of ₹1,50,000 each issued at ₹ 3,750 & repayable after 25 years.
COMPUTE the cost of debt if there is no corporate tax.

Convertible bonds & YTM

Question 4 - Pyq

TT Ltd. issued 20,000, 10% convertible debenture of ₹ 100 each with a maturity period of 5 years. At maturity the debenture holders will have the option to convert debentures into equity shares of the company in a ratio of 1:5 (5 shares for each debenture). The current market price of the equity share is ₹ 20 each and historically the growth rate of the share is 4% per annum. Assuming tax rate is 25%.
Compute the cost of 10% convertible debenture using Approximation Method and Internal Rate of Return Method.
PV Factor are as under:

Year	1	2	3	4	5
PV Factor @ 10%	0.909	0.826	0.751	0.683	0.621
PV Factor @ 15%	0.870	0.756	0.658	0.572	0.497

Value of Amortized bonds

Question 5 -

A Company sells a 4 year Bond of ₹ 20,000 at 12.5% Interest per annum. The bond will be amortised equally over its life. **What** will be the Present value of the Bond for an investor who expects a minimum rate of return of 12%?

Cost of Preference Share

Question 6 - Study Material

Referring to the earlier question but taking into consideration that if the company proposes to redeem the preference shares at the end of 10th year from the date of issue. **Calculate** the Cost of Preference Share?
[KP = 0.107]

Question 7 -

Correct Ltd. issued 30,000 15% Preference shares of ₹ 100 each, redeemable at 10% premium after 20 years. Issue Management Expenses were ₹ 30,000.
Find out the Cost of Preference Capital, if shares are issued:
(a) at par, **(b)** at a premium of 10%, and **(c)** at a discount of 10%.

Cost of Equity Share

Dividend Price Approach

Question 8 -

Bee Ltd. has a stable income and stable dividend policy. The average annual dividend payout is ₹ 27 per share (Face value = ₹ 100). You are required to **find out:**

(1) Cost of Equity Capital, if market price in Year 1 is ₹ 150.
(2) Expected Market price in Year 2, if cost of Equity is expected to rise to 20%.
(3) Dividend payout required in year 2, if the company were to have an expected Market Price of ₹ 160 per share, at the existing Cost of Equity.

Earnings Price Approach

Question 9 -

Renowned Ltd. has a uniform income that accrues in a four year business cycle. It has an average EPS of ₹ 25 (per share of ₹ 100) over its business cycle. You are required to **find out:**

(1) Cost of Capital, if Market Price in Year 1 is ₹ 150.
(2) Expected Market Price in Year 2, if Cost of Equity is expected to rise to 18%
(3) EPS in Year 2, if the Company were to have an expected Market Price of ₹ 160 per share, at the existing Cost of Equity.

Dividend Growth Model Approach

Question 10 - Study Material

A company's share is quoted in the market at ₹ 40 currently. A company pays a dividend of ₹ 2 per share and investors expect a growth rate of 10% per year, **compute:**

(a) The company's cost of equity capital.
(b) If anticipated growth rate is 11% p.a. calculate the indicated market price per share.
(c) If the company's cost of capital is 16% and anticipated growth rate is 10% p.a., calculate the market price if a dividend of ₹ 2 per share is to be maintained.

Question 11 -

During the past four years following dividend has been paid by Bharat Ltd. which are as follows:

Year Ended	Dividend per Share (₹)
2002	26
2005	30

The company has issued 10,000 ordinary shares of ₹ 100 each. The current market value of each ordinary share of Bharat Ltd. is ₹ 235 cum-dividend. The 2005 dividend of ₹ 30 per share has just been paid.
You are required to **estimate** the cost of capital for Bharat Ltd. ordinary share capital.

Capital Asset Pricing Model (CAPM)

Question 12 - Study Material

Calculate the Cost of Equity of H Ltd., whose risk free rate of return equals 10%. The firm's beta equals 1.75 and the return on the market portfolio equals to 15%.

Question 13 -

The Risk-free return is 9% and the Market return is 15%. Ram intends to invest 80% of his money in an investment having a beta of 0.8 and 20% of this investment having a Beta of 1.4. **Required:**

(i) **What** will be the return from each investment?
(ii) **What** will be his overall return?
(iii) **What** will be the Beta Factor for his total investment?

Realised Yield Approach

Question 14 -

An individual wishes to purchase the share of a Company for ₹ 500. At present, the Company is expected to pay a dividend of ₹ 40 on this share at the end of the year and its Market Price after the payment of the dividend is expected to be ₹ 520. **What** is the Cost of Equity in this case, using the Realised Yield Approach?

Valuation of Equity Share Capital – Present Value of Future Dividend Flows

Question 15 - Study Material

Calculate the cost of equity from the following data using realized yield approach:

Year	1	2	3	4	5
Dividend per share	1.00	1.00	1.20	1.25	1.15
Price per share(at the beginning)	9.00	9.75	11.50	11.00	10.60

Cost of Retained Earnings

Question 16 -

Calculate the cost of retained earnings from the following information:

Current market price of a share : ₹ 140
Cost of Flotation/brokerage per share : 3% on market price
Growth in expected dividend : 5%
Expected dividend per share on new shares : ₹ 14
Shareholders marginal/personal income tax : 22%

Weighted Average Cost of Capital

Question 17 - Pyq

PQR Ltd. has the following Capital Structure on 31st October:

Equity Share Capital (2,00,000 Shares of ₹ 10 each)	₹ 20,00,000
Reserves and Surplus	₹ 20,00,000
12% Preference Shares	₹ 10,00,000
9% Debentures	₹ 30,00,000
Total	₹ 80,00,000

The Market Price of Equity Share is ₹ 30. It is expected that the Company will pay next year a dividend of ₹ 3 per share, which will grow at 7% forever. Assume 40% Income tax rate. You are required to **compute** the Weighted Average Cost of Capital of the Company using Market Value Weights.

Question 18 - Pyq

The Capital Structure of a Company as on 31st March is as follows:

Equity Share Capital (6,00,000 Shares of ₹ 100 each)	₹ 6.00 Crores
Reserves and Surplus	₹ 1.20 Crores
12% Debentures of ₹ 100 each	₹ 1.80 Crores

For the year ended 31st March, the company has paid Equity Dividend at 24%. Dividend is likely to grow by 5% every year. Market Price of Equity Share is ₹ 600 per Share. Income Tax Rate applicable to the Company is 30%. **Required:**

(1) Compute the Current Weighted Average Cost of Capital.

(2) The Company has a plan to raise a further ₹ 3 crores by way of Long Term Loan at 18% Interest. If the Loan is raised, the Market Price of Equity Share is expected to fall to ₹ 500 per share. **What** will be the new Weighted Average Cost of Capital of the Company?

Question 19 - Pyq

The Capital structure of PQR Ltd. is as follows:

Particulars	₹
10% Debenture	3,00,000
12% Preference Shares	2,50,000
Equity Share (face value ₹ 10 per share)	5,00,000
	10,50,000

Additional Information:

(i) ₹ 100 per debenture redeemable at par has 2% floatation cost & 10 years of maturity. The market price per debenture is ₹ 110.

(ii) ₹ 100 per preference share redeemable at par has 3% floatation cost & 10 years of maturity. The market price per preference share is ₹ 108.

(iii) Equity share has ₹ 4 floatation cost and market price per share of ₹ 25. The next year expected dividend is ₹ 2 per share with annual growth of 5%. The firm has a practice of paying all earnings in the form of dividends.

(iv) Corporate Income Tax rate is 30%. Required:

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

Question 20 - Pyq

The capital structure of Shine Ltd. as on 31.03.2024 is as under:

Particulars	Amount (₹)
Equity share capital of ₹10 each	45,00,000
15% Preference share capital of ₹100 each	36,00,000
Retained earnings	32,00,000
13% convertible debenture of ₹100 each	67,00,000
11% Term Loan	20,00,000
Total	**2,00,00,000**

Additional information:

(A) Company issued 13% Convertible Debentures of ₹100 each on 01.04.2023 with a maturity period of 6 years. At maturity , the debenture holders will have an option to convert the debentures into equity shares of the company in the ratio of 1:4 (4 shares for each debenture). The market price of the equity share is ₹25 each as on 31.03.2024 and the growth rate of the share is 6% per annum.

(B) Preference stock, redeemable after eight years, is currently selling at ₹150 per share.

(C) The prevailing default-risk free interest rate on 10-year GOI treasury bonds is 6%. The average market risk premium is 8% and the Beta (β) of the company is 1.54.

Corporate tax rate is 25% and rate of personal income tax is 20%.

You are required to **calculate** the cost of:

(i) Equity Share Capital

(ii) Preference Share Capital

(iii) Convertible Debenture

(iv) Retained Earnings

(v) Term Loan

Question 21 - Study Material

(i) **DETERMINE** the cost of capital of Best Luck Limited using the book value (BV) and market value (MV) weights from the following information:

Sources	Book Value (₹)	Market Value (₹)
Equity Shares	1,20,00,000	2,00,00,000
Retained Earnings	30,00,000	---
Preference Shares	36,00,000	33,75,000
Debentures	9,00,000	10,40,000

Additional information:

(i) Equity: Equity shares are quoted at ₹ 130 per share and a new issue priced at ₹ 125 per share will be fully subscribed; flotation costs will be ₹ 5 per share.

(ii) Dividend: During the previous 5 years, dividends have steadily increased from ₹ 10.60 to ₹ 14.19 per share. Dividend at the end of the current year is expected to be ₹ 15 per share.

(iii) Preference shares: 15% Preference shares with face value of ₹ 100 would realise ₹ 105 per share.

(iv) Debentures : The company proposes to issue 11-year 15% debentures but the yield on debentures of similar maturity and risk class is 16% ; flotation cost is 2%.

(v) Tax : Corporate tax rate is 35%. Ignore dividend tax. Floatation cost would be calculated on face value.

Debt – Equity Ratio using WACC

Question 22 -

Aries Ltd has a WACC of 18.00%. Its Capital Structure consists of Equity and Debt only. If the PE Ratio is 4, Interest Rate on Debt Is 15%, Tax Rate is 35%, **find out** the Company's Debt-Equity Ratio.

Effect of Debt Funding on Value of Equity Shares – WACC not affected by Gearing

Question 23 - Rtp

Zeta Ltd is presently financed entirely by Equity Shares. The current Market Value is ₹ 6,00,000. A Dividend of ₹ 1,20,000 has just been paid. This level of dividend is expected to be paid indefinitely.

The Company is thinking of investing in a new project involving an outlay of ₹ 5,00,000 now and is expected to generate Net Cash Receipts of ₹ 1,05,000 per annum indefinitely.

The project would be financed by issuing ₹ 5,00,000 Debentures at 18% Interest Rate. Ignoring tax consideration:
(1) Calculate the Value of Equity Shares & the gain made by Shareholders, if the Cost of Equity rises to 21.6%.
(2) Prove that the Weighted Average Cost of Capital is not affected by gearing.

Marginal WACC

Question 24 -

On January 1, 2005 the total market value of the Octane Company was ₹ 60 million. During the year, the company plans to raise and invest ₹ 30 million in new projects. The firm's present market value capital structure, shown below, is considered to be optimal. Assume that there is no short term debt.

Debt	₹ 3,00,00,000
Common Equity	₹ 3,00,00,000
Total Capital	₹ 6,00,00,000

New bonds will have an 8% coupon rate, and they will be sold at par.
Common stock, currently selling at ₹ 30 a share, can be sold to net the company ₹ 27 a share.
Stockholders' required rate of return is estimated to be 12% consisting of a dividend yield of 4% and an expected constant growth rate of 8%. (The next expected dividend is ₹ 1.20, so ₹ 1.20/30 = 4%).
Retained Earnings for the year are estimated to be ₹ 3 million.
The marginal corporate tax is 40%.
Required-
(a) To maintain the present capital structure, **how much** of the new investment must be financed by common equity?
(b) How much of the needed new common equity funds must be generated internally?
(c) Calculate the cost of each common equity component?
(d) At **what** level of capital expenditures will the firm's WACC increase?
(e) Calculate the firm's WACC using (1) the cost of retained earnings (First **breaking point**) and (2) the cost of new equity (second **breaking point**) (3) WACC of additional funds ₹ 30 million.

Question 25 - Pyq

The R & G Co. has following capital structure at 31st March 2010, which is considered to be optimum

Particulars	Amount (₹)
13% Debentures	3,60,000
11% Preference	1,20,000
Equity Share Capital (2,00,000 Shares)	19,20,000

The Company's Share has a current market price of ₹ 27.75 per share.
The expected Dividend per share in the next year is 50% of the 2010 EPS of the last 10 years is as follows. The past trends are expected to continue:

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EPS (₹)	1	1.12	1.254	1.405	1.574	1.762	1.974	2.211	2.476	2.773

The company can issue 14% New Debenture the company's debenture is currently selling at Rs 98. The New Preference Issue can be sold at a net price of ₹ 9.80, paying a dividend of ₹ 1.20 per share.
The Company's Marginal Tax Rate is 50%.
(1) Calculate the After Tax Cost – (a) of new Debt and new preference Share Capital, (b) of ordinary Equity, assuming new Equity comes from Retained Earnings.
(2) Calculate the marginal cost of capital.
(3) How much can be spent for Capital Investment before new ordinary shares must be sold? Assuming that retained earnings available for next year's investment are 50% of 2010 earnings.
(4) What will be Marginal Cost of Capital (Cost of fund raised in excess of the amount calculated in Part (3) , if the company can sell new Ordinary shares to net ₹ 20 per share? Cost of Debt and of Preference Capital is constant.

Question 26 - Pyq

MR Ltd. has the following capital structure, which is considered to be optimum as on 31.03.2022.

Equity share capital (50,000 shares)	₹ 8,00,000
12% Pref. share capital	₹ 50,000
15% Debentures	₹ 1,50,000
	₹ 10,00,000

The earnings per share (EPS) of the company were ₹ 2.50 in 2021 and the expected growth in equity dividend is 10% per year. The next year's dividend per share (DPS) is 50% of EPS of the year 202I. The current market price per share (MPS) is ₹ 25.00. The 15% new debentures can be issued by the company. The company's debentures are currently selling at ₹ 96 per debenture. The new 12% Pref. shares can be sold at a net price of ₹ 91.50 (face value ₹ 100 each). The applicable tax rate is 30%.
You are required to **Calculate**
(a) After tax cost of
1. New debt,
2. New pref. share capital and
3. Equity shares assuming that new equity shares come from retained earnings.

(b) Marginal cost of capital,
How much can be spent for capital investment before sale of new equity shares assuming that retained earnings for next year investment is 50% of 2021?

Equilibrium Price

Question 27 - Rtp

M/s Robert Cement Corporation has a financial structure of 30% debt and 70% equity. The company is considering various investment proposals costing less than ₹ 30 lakhs. The corporation does not want to disturb its present capital structure.
The cost of raising the debt and equity are as follows:

Project Cost	Cost of Debt	Cost of Equity
Upto ₹ 5 lakhs	9%	13%
Above ₹ 5 lakhs & upto ₹ 20 lakhs	10%	14%
Above ₹ 20 lakhs & upto ₹ 40 lakhs	11%	15%
Above ₹ 40 lakhs & upto ₹ 1 crore	12%	15.5%

Assuming the tax rate of 50%, you are required to **calculate**:
(1) Cost of capital of two projects A & B whose funds requirements are ₹ 8 Lakhs and ₹ 21 lakhs respectively; and
(2) If a project is expected to give an after tax return of 11% determine under what conditions it would be acceptable.

K_e Using WACC – Reverse Working

Question 28 - Rtp

Bounce Ltd. evaluates all its capital projects using a discounting rate of 15%. Its capital structure consists of equity share capital, retained earnings, bank term loan and debentures redeemable at par.
Rate of interest on bank term loan is 1.5 times that of debenture. Remaining tenure of debenture and bank loan is 3 years and 5 years respectively.
Book value of equity share capital, retained earnings and bank loan is ₹ 10,00,000, ₹ 15,00,000 and ₹ 10,00,000 respectively.
Debentures which are having book value of ₹ 15,00,000 are currently trading at ₹ 97 per debenture.
The ongoing P/E multiple for the shares of the company stands at 5.
You are required to **Calculate** the rate of interest on bank loans and debentures if tax applicable is 25%.

Chapter 3
Financing Decisions - Capital Structure

Effects of Different Modes of Financing – Maximizing EPS & MPS

Question 1 - Pyq

Earnings before interest and tax of a company are ₹ 4,50,000. Currently the company has 80,000 Equity shares of ₹ 10 each, retained earnings of ₹ 12,00,000. It pays annual interest of ₹ 1,20,000 on 12% debentures.
The company proposes to take up an expansion scheme for which it needs additional funds of ₹ 6,00,000.
It is anticipated that after that after expansion, the company will be able to achieve the same return on investment as at present. It can raise funds either through debts at a rate of 12%p.a. or by issuing Equity shares at par. Tax rate is 40%.
Compute the earning per share if:
(i) The additional funds were raised through debts.
(ii) The additional funds were raised by issue of Equity Shares.
Advise whether the company should go for expansion plan and which sources of finance should be preferred.

Question 2 - Study Material, Rtp

Goodluck Charm Ltd., a profit making company, has a paid-up capital of ₹ 100 lakhs consisting of 10 lakhs ordinary shares of ₹ 10 each. Currently, it is earning an annual pre-tax profit of ₹ 60 lakhs.
The company's shares are listed and are quoted in the range of ₹ 50 to ₹ 80.
The management wants to diversify production and has approved a project which will cost ₹ 50 lakhs and which is expected to yield a pre-tax income of ₹ 40 lakhs per annum.
To raise this additional capital, the following options are under consideration of the management:
(a) To issue equity capital for the entire additional amount. It is expected that the new shares (face value of ₹ 10) can be sold at a premium of ₹ 15.
(b) To issue 16% non-convertible debentures of ₹ 100 each for the entire amount.
(c) To issue equity capital for ₹ 25 lakhs (face value of ₹ 10) and 16% non-convertible debentures for the balance amount. In this case, the company can issue shares at a premium of ₹ 40 each.
You are required to **advise** the management as to how the additional capital can be raised, keeping in mind that the management wants to maximise the earnings per share to maintain its goodwill. The company is paying income tax at 50%.

Question 3 - Pyq

Delta Ltd. Currently has an Equity Share Capital of ₹ 10,00,000 consisting of 1,00,000 Equity Shares of ₹ 10 each. The company is going through a major expansion plan requiring to raise funds to the tune of ₹ 6,00,000.
To finance the expansion, the management has following plans:
Plan I Issue of 60,000 Equity shares of ₹ 10 each.
Plan II Issue of 40,000 Equity shares of ₹ 10, and the balance through long term borrowing at 12% interest p.a.
Plan III Issue of 30,000 Equity shares of ₹ 10 each and 3,000 ₹ 100 9% Debentures.
Plan IV Issue of 30,000 Equity shares of ₹ 10 each and balance through 6% preference shares.
The Company's EBIT is expected to be ₹ 4,00,000 p.a. Assume Corporate tax rate of 40%.
(1) Calculate EPS in each of the above plans.
(2) Ascertain the degree of financial leverage in each plan.

Question 4 - Rtp

Prakash Limited provides you the following information:

	(₹)
Profit (EBIT)	3,00,000
Less: Interest on Debenture @ 10%	(50,000)
EBT	2,50,000
Less Income Tax @ 50%	(1,25,000)
	1,25,000
No. of Equity Shares (₹ 10 each)	25,000
Earnings per share (EPS)	5
Price /EPS (PE) Ratio	10

The company has reserves and surplus of ₹ 7,50,000 and required ₹ 5,00,000 further for modernisation.
Return on Capital Employed (ROCE) is constant.
Debt (Debt/ Debt + Equity) Ratio higher than 40% will bring the P/E Ratio down to 8 and increase the interest rate on additional debts to 12%.
You are required to **ASCERTAIN** the probable price of the share:
(i) If the additional capital is raised as debt; and
(ii) If the amount is raised by issuing equity shares at ruling market price

Question 5 - Study Material

The following figures are made available to you:

Net profits for the year	18,00,000
Less: Interest on secured debentures at 15% p.a.	
(Debentures were issued 3 months after the commencement of the year)	(1,12,500)
Profit before tax	16,87,500
Less: Income-tax at 35% and dividend distribution tax	(8,43,750)
Profit after tax	8,43,750
Number of equity shares (₹ 10 each)	1,00,000
Market quotation of equity share	₹ 109.70

The company has accumulated revenue reserves of ₹ 12 lakhs.
The company is examining a project calling for an investment obligation of ₹ 10 lakhs.
This investment is expected to earn the same rate as funds already employed.
You are informed that a debt equity ratio (Debt divided by debt plus equity) higher than 40% will cause the price earnings ratio to come down by 25% and the interest rate on additional borrowings will cost the company 300 basis points more than on their current borrowings in secured debentures.
You are required to **advise** the company on the probable price of the equity share, if:
(a) The additional investment were to be raised by way of loans; or
(b) The additional investments were to be raised by way of equity shares issued at ₹ 100 per share.

Question 6 - Study Material, Rtp

A company provides the following figures:

Particulars	Amount (₹)
Profit before interest and tax	52,00,000
Less: Interest on debentures @ 12%	(12,00,000)
Profit before tax	40,00,000
Less: Income-tax @ 50%	(20,00,000)
Profit after tax	20,00,000
Number of equity shares (of ₹ 10 each)	8,00,000
Earning per share (EPS)	2.50
Market price per share	25
P/E (Price/Earning) Ratio	10

The company is planning to start a new project requiring a total capital outlay of ₹40,00,000.
You are informed that a debt equity ratio (D/D+E) higher than 35% pushing the Ke up to 12.5% means reducing PE ratio to 8 and raising the interest rate on additional amounts borrowed at 14%.
FIND OUT the probable price of share if:
(i) The additional funds are raised as a loan.
(ii) The amount is raised by issuing equity shares.
(**Note :** Retained earnings of the company is ₹1.2 crore)

Question 7 - Pyq

The particulars relating to Raj Ltd. for the year ended 31 st March, 2022 are given as follows:

Output (units at normal capacity)	1,00,000
Selling price per unit	₹ 40
Variable cost per unit	₹ 20
Fixed cost	₹ 10,00,000

The capital structure of the company as on 31st March, 2022 is as follows:

Particulars	Amount in ₹
Equity share capital (1,00,000 shares of ₹ 10 each)	10,00,000
Reserves and surplus	5,00,000
Current liabilities	5,00,000
Total	20,00,000

Raj Ltd. has decided to undertake an expansion project to use the market potential that will involve ₹ 20 lakhs. The company expects an increase in output by 50%. Fixed cost will be increased by ₹ 5,00,000 and variable cost per unit will be decreased by 15%.
The additional output can be sold at the existing selling price without any adverse impact on the market.
The following alternative schemes for financing the proposed expansion program are planned:

		(Amount in ₹)
Alternative	**Debt**	**Equity Shares**
1	5,00,000	Balance
2	10,00,000	Balance
3	14,00,000	Balance

Current market price per share is ₹ 200.
Slab wise interest rate for fund borrowed is as follows:

Fund limit	Applicable interest rate
Up-to ₹ 5,00,000	10%
Over₹ 5,00,000 and up-to ₹ 10,00,000	15%
Over ₹ 10,00,000	20%

Find out which of the above-mentioned alternatives would you recommend for Raj Ltd. with reference to the EPS, assuming a corporate tax rate is 40%?

Financial Break-even point & Indifference Point

Question 8 - Mtp

HN Limited is considering a total investment of ₹ 20 lakhs.
You are required to **CALCULATE** the level of earnings before interest and tax (EBIT) at which the EPS **indifference point** between the following financing alternatives will occur:
(i) Equity share capital of ₹ 12,00,000 and 14% debentures of ₹ 8,00,000; **Or**
(ii) Equity share capital of ₹ 8,00,000, 16% preference share capital of ₹ 4,00,000 and 14% debentures of ₹ 8,00,000.
Assume the corporate tax rate is 30% and par value of equity share is ₹10 in each case.

Question 9 - Rtp, Study Material

Ganesha Limited is setting up a project with a capital outlay of ₹ 60,00,000.
It has two alternatives in financing the project cost.
Alternative (a): 100% equity finance in ₹ 200 shares.
Alternative (b): Debt-equity ratio 2:1
The rate of interest payable on the debts is 18% p.a. The corporate tax rate is 40%.
Calculate the indifference point between the two alternative methods of financing.

Question 10 - Study Material, Pyq, Mtp, Rtp

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

Proposals	% of Equity	% of Debt	% of Preference Shares
P	100	-	-
Q	50	50	-
R	50	-	50

- Cost of Debt :10%, Cost of Preference shares : 10%.
- Tax Rate : 50%.
- Equity Shares of the face value of ₹ 10 each will be issued at a premium of ₹ 10 per share.
- Total Investment to be raised ₹ 40,00,000.
- Expected Earnings Before Interest and Tax ₹ 18,00,000.

From the above proposals the management wants to take **advice** from you for appropriate plans after computing the following :
(1) Earnings Per Share;
(2) Financial Break Even Point, and
(3) Compute the EBIT Range among the plans for indifference. Also **indicate** if any of the plans dominate.

Net Income Approach

Question 11 - Study Material

Rupa Company's EBIT is ₹ 5,00,000. The company has 10%, 20 lakhs debentures.
The equity capitalization rate i.e. Ke is 16%.
You are required to **calculate**:
(i) Market value of equity and value of firm;
(ii) Overall cost of capital.

Question 12 -

Bajaj Ltd. has earnings before interest and taxes (EBIT) of ₹ 20 million.
The company currently has outstanding debt of ₹ 40 million at a cost of 8%.
(a) Using the net income (NI) approach and a cost of equity of 17.5%;
(1) Compute the total value of the firm and firm's overall weighted average cost of capital (Ko) and
(2) Determine the firm's market debt/equity ratio.
(b) Assume that the firm issues an additional ₹ 20 million in debt and uses the proceeds to retire stock; the interest rate and the cost of equity remain the same.
(1) Compute the new total value of firm and the firm's overall cost of capital and
(2) Determine the firm's market debt/equity ratio.

Net Operating Income Approach

Question 13 - Study Material

Amita Ltd's operating income is ₹ 5,00,000. The firm's debt is 10% and currently the firm employs ₹ 15,00,000 of debt. The overall cost of capital of the firm is 15%.
You are required to **determine**:
(i) Total value of the firm;
(ii) Cost of equity.

Question 14 -

Financial Ltd. has EBIT ₹ 20 million. The company currently has outstanding debt of ₹ 40 million at cost of 8%
(a) Using the net operating income approach and an overall cost of capital of 12%;
(1) compute the value of stock market value of firm, and the cost of equity and
(2) determine the firm's market debt/equity ratio.
(b) Determine the answer to (a) if the company were to sell the additional ₹ 20 million in debt.

MM Approach & Arbitrage Process

Question 15 - Study Material

Alpha Limited and Beta Limited are identical except for capital structures.
Alpha Ltd. has 50 per cent debt and 50 per cent equity, whereas Beta Ltd. has 20 per cent debt and 80 per cent equity. (All percentages are in market-value terms).
The borrowing rate for both companies is 8 percent in a no-tax world, and capital markets are assumed to be perfect.
(a) (i) If you own 2 percent of the shares of Alpha Ltd., **DETERMINE** your return if the company has net operating income of ₹3,60,000 and the overall capitalisation rate of the company, K0 is 18 per cent?
(ii) Calculate the implied required rate of return on equity?
(b) Beta Ltd. has the same net operating income as Alpha Ltd.
(i) DETERMINE the implied required equity return of Beta Ltd.?
(ii) ANALYSIS: Why does it differ from that of Alpha Ltd.?

Question 16 - Mtp

Capital structure (in market-value terms) of AN Ltd is given below:

Company	Debt	Equity
AN Ltd.	50%	50%

The borrowing rate for the company is 10% in a no-tax world and capital markets are assumed to be perfect.
Required:
(i) If Mr. R, owns 8% of the equity shares of AN Ltd., **DETERMINE** his return if the Company has net operating income of ₹ 10,00,000 and the overall capitalization rate of the company (Ko) is 20%.
(ii) CALCULATE the implied required rate of return on equity of AN Ltd.

Question 17 - Rtp

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

Particulars	Bee Ltd.	Cee Ltd.
12% Debt	₹ 27,00,000	-
Equity Capitalization Rate	-	18
Expected Net Operating Income	₹ 9,00,000	₹ 9,00,000

You are required to:
(1) **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.
(2) **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.

Question 18 - Pyq

The details about two companies R Ltd. and S Ltd. having same operating risk are given below :

Particulars	R Ltd	S Ltd
Profit before interest & tax	₹ 10 lakhs	₹ 10 lakhs
Equity share capital @ 10 each	₹ 17 lakhs	₹ 50 lakhs
Long term borrowings @10 %	₹ 33 lakhs	-
Cost of Equity (Ke)	18%	15%

You are required to :
(1) **Calculate** the value of equity of both the companies on the basis of M.M. Approach without tax.
(2) **Calculate** the Total value of both the companies on the basis of M.M. Approach without tax.

Question 19 - Study Material

Following data is available in respect of two companies having same business risk:
Capital employed = ₹2,00,000 ,EBIT = ₹30,000 Ke = 12.5%

Sources	Levered company (₹)	Unlevered company (₹)
Debt (@ 10%)	1,00,000	Nil
Equity	1,00,000	2,00,000

Investor is holding 15% shares in the levered company.
CALCULATE increase in annual earnings of investors if he **switches his holding** from Levered to Unlevered company.

Question 20 - Study Material

Following data is available in respect of two companies having same business risk:
Capital employed = ₹2,00,000 ,EBIT = ₹30,000

Sources	Levered company (₹)	Unlevered company (₹)
Debt (@ 10%)	1,00,000	Nil
Equity	1,00,000	2,00,000
Ke	20%	12.5%

Investor holds 15% shares in Unlevered company.
CALCULATE increase in annual earnings of investors if he **switches his holding** from Unlevered to Levered Company.

Miscellaneous Practical Problems

Question 21 - Rtp

ABC Ltd adopts Constant-WACC Approach, and believes that its cost of debt and overall cost of capital is at 9% and 12% respectively. If the ratio of the market value Debt to market value of Equity is 0.8, **what** Rate of Return do equity shareholders earn? Assume that there are no taxes.

Question 22 - Rtp

Zordon Ltd. has net operating income of Rs 5,00,000 and total capitalization of Rs 50,00,000 during the current year. The company is contemplating to introduce debt financing in capital structure and has various options for the same.

The following information is available at different levels of debt value:

Debt value (Rs)	Interest rate (%)	Equity capitalization rate (%)
0	-	10.00
5,00,000	6.0	10.50
10,00,000	6.0	11.00
15,00,000	6.2	11.30
20,00,000	7.0	12.40
25,00,000	7.5	13.50
30,00,000	8.0	16.00

Assuming no tax and that the firm always maintains books at book values, you are REQUIRED to **calculate**:

(a) Amount of debt to be employed by a firm as per traditional approach.

(b) Equity capitalization rate, if MM approach is followed.

Margin of safety

Question 23 - Mtp

The financial advisor of Sun Ltd is confronted with following two alternative financing plans for raising ₹ 10 lakhs that is needed for plant expansion and modernization

Alternative I: Issue 80% of funds with 14% Debenture [Face value (FV) ₹ 100] at par and redeem at a premium of 10% after 10 years and balance by issuing equity shares at 33.33 % premium.

Alternative II: Raise 10% of funds required by issuing 8% Irredeemable Debentures [Face value (FV) ₹ 100] at par and the remaining by issuing equity shares at current market price of ₹125.

Currently, the firm has an Earnings per share (EPS) of ₹ 21

The modernization and expansion programme is expected to increase the firm's Earnings before Interest and Taxation (EBIT) by ₹ 200,000 annually.

The firm's condensed Balance Sheet for the current year is given below:

Balance Sheet as on 31.3.2022

Liabilities	Amount (₹)	Assets	Amount (₹)
Current Liabilities	5,00,000	**Current Assets**	16,00,000
10% Long Term Loan	15,00,000	**Plant & Equipment (Net)**	34,00,000
Reserves & Surplus	10,00,000		
Equity Share Capital (FV: ₹ 100 each)	20,00,000		
TOTAL	50,00,000	**TOTAL**	50,00,000

- However, the finance advisor is concerned about the effect that issuing of debt might have on the firm. The average debt ratio for firms in industry is 35%.He believes if this ratio is exceeded, the P/E ratio of the company will be 7 because of the potentially greater risk.
- If the firm increases its equity capital by more than 10 %, he expects the P/E ratio of the company will increase to 8.5 irrespective of the debt ratio.
- Assume Tax Rate of 25%. Assume target dividend pay-out under each alternative to be 60% for the next year and growth rate to be 10% for the purpose of calculating Cost of Equity.

SUGGEST with reason which alternative is better on the basis of each of the below given criteria:

(1) Earnings per share (EPS) & Market Price per share (MPS)

(2) Financial Leverage

(3) Weighted Average Cost of Capital & Marginal Cost of Capital (using Book Value weights)

Chapter 4
Financing Decision - Leverages

Question 1 - Pyq

Calculate the degree of operating leverage, degree of financial leverage and the degree of combined leverage for the following firms:

Particulars	N	S	D
Production (in units)	17,500	6,700	31,800
Fixed cost (₹)	4,00,000	3,50,000	2,50,000
Interest on loan (₹)	1,25,000	75,000	Nil
Selling price per unit (₹)	85	130	37
Variable cost per unit (₹)	38.00	42.50	12.00

Question 2 - Mtp

The following information is related to Navya Company Ltd. for the year ended 31st March 2022:

Equity share capital (₹ 10 each)	₹ 65,50,000
12% Bonds of ₹ 1,00 each	₹ 60,91,400
Sales	₹ 111 lakhs
Fixed cost (excluding interest)	₹ 7,15,000
Financial leverage	1.55
Profit-volume Ratio	25%
Income Tax Applicable	30%

You are required to **Calculate** and show calculations upto two decimal points.
(1) Operating Leverage.
(2) Combined leverage; and
(3) Earnings per share.

Question 3 - Pyq

Following is the Balance Sheet of EXIM Ltd. as on 31st March, 2024:

Liablities	₹	Assets	₹
Equity Share Capital of ₹100 each	20,00,000	Fixed Assets	50,00,000
Retained Earnings	4,00,000	Current Assets	30,00,000
12.5 % Debenture	40,00,000		
Current Liabilities	16,00,000		
	80,00,000		**80,00,000**

The additional information is given as under:
Fixed costs per annum (exclusive interest) : ₹16,00,000
Variable operating cost ratio : 70%
Total Assets turnover ratio : 2.5
Income tax rate : 30%
You are required to **calculate**:
(i) Earnings per Share
(ii) Operating Leverage
(iii) Financial Leverage
(iv) Combined Leverage

Question 4 - Study Material, Pyq

From the following, **prepare** the Income statement of Company A, B and C.

Company	A	B	C
Financial Leverage	3 : 1	4 : 1	2 : 1
Interest	₹ 200	₹ 300	₹ 1,000
Operating Leverage	4 : 1	5 : 1	3 : 1
Variable cost as a percentage to sales	$66\frac{2}{3}$ %	75%	50%
Income tax rate	45%	45%	45%

Question 5 - Pyq

From the following data of Company A and Company B, **Prepare** their Income Statement

Particulars	Company A	Company B
Variable cost	₹ 56,000	60% of sales
Fixed Cost	₹ 20,000	-
Interest Expense	₹ 12,000	₹ 9,000
Financial Leverage	05:01	-
Operating Leverage	-	04:01
Income tax rate	30%	30%
Sales	-	₹ 1,05,000

Question 6 - Pyq

A company had the following Balance Sheet as on March 31, 2006:

Liabilities and Equity	₹ (In Crores)	Assets	₹ (In Crores)
Equity Share Capital (1 crore shares of ₹ 10 each)	10	**Fixed Assets (Net)**	25
Reserves and Surplus	2	**Current Assets**	15
15% Debentures	20		
Current Liabilities	8		
Total	**40**	**Total**	**40**

The additional information given is as under:

Fixed Costs per annum (excluding interest)	₹ 8 crores
Variable operating costs ratio	65%
Total Assets turNover ratio	2.5
Income-tax rate	40%

Calculate the following and comment:

(i) Earnings per share **(iii)** Financial Leverage **(v)** Current Ratio

(ii) Operating Leverage **(iv)** Combined Leverage

Question 7 - Study Material, Rtp

(i) You are required to **calculate** the Operating leverage from the following data:

Sales	₹ 50,000
Variable Costs	60%
Fixed Costs	₹ 12,000

(ii) You are required to **calculate** the Financial Leverage from the following data:

Net Worth	₹ 25,00,000
Debt /Equity	3:1
Interest rate	12%
Operating Profit	₹ 20,00,000

Question 8 - Study Material, Pyq

You are given two financial plans of a company which has two financial situations.

The detailed information is as under:

Installed Capacity	10,000 units	
Actual Production and Sales	60% of installed capacity	
Selling Price per unit	₹ 30	
Variable cost per unit	₹ 20	
Fixed cost	Situation A = ₹ 20,000	Situation B = ₹ 25,000

Capital Structure of the company is as follows:

	Financial Plans	
	XY (₹)	**XM (₹)**
Equity	12,000	35,000
Debt (Cost of Debt 12%)	40,000	10,000
	52,000	**45,000**

You are required to **calculate** operating Leverage and Financial Leverage of both the plans.

Percentage change concept with Leverages

Question 9 - Study Material

XYZ Ltd. sells 2,000 units @ ₹ 10 per unit. The variable cost of production is ₹ 7 and fixed cost is ₹ 1,000. The company raised the required funds by issue of 100, 10% debentures @ ₹ 100 each and 2,000 equity shares @ ₹ 10 per share. The sales of XYZ Ltd. are expected to increase by 20%. Assume the tax rate of the company is 50%. You are required to **calculate** the impact of increase in sales on earnings per share.

Question 10 - Study Material

The following information is available for a concern for the year ended 31.3.2011.

Total Sales (Quantity)	100,000 units
Fixed Cost	₹ 12,60,000
Variable Cost	55% of sales
Debt (@ 10%)	₹ 54,00,000
Equity (Face value of each share of ₹ 10)	₹ 50,00,000
Income tax rate	35%
Selling price per unit	₹ 80

You are required to **find out** –

(1) Income Statement for the year ended 31.3.2011.
(2) Operating and Financial Leverage
(3) Company's Return on Investment
(4) How much of the Company's sales have to come down so that earning of the company before tax comes down to zero?

Question 11 - Study Material

PL Forgings Ltd. has the following balance sheet and income statement information:

Balance Sheet as on March 31st

Liabilities	₹	Assets	₹
Equity Capital (₹ 10 per share)	8,00,000	**Net Fixed Assets**	10,00,000
10% Debt	6,00,000	**Current Assets**	9,00,000
Retained Earnings	3,50,000		
Current Liabilities	1,50,000		
	19,00,000		**19,00,000**

Income Statement for the year ending March 31

Particulars	₹
Sales	3,40,000
Operating expenses (including ₹ 60,000 depreciation)	(1,20,000)
EBIT	2,20,000
Less: Interest	(60,000)
Earnings before tax	1,60,000
Less: Taxes	(56,000)
Net Earnings (EAT)	**1,04,000**

(a) **Determine** the degree of operating, financial and combined leverages at the current sales level, if all operating expenses, other than depreciation, are variable costs.
(b) If total assets remain at the same level, but sales
(i) increase by 20 percent ; and
(ii) decrease by 20 per cent, **what** will be the earnings per share at the new sales level?

Question 12 - Pyq

Details of a company for the year ended 31st March, 2022 are given below:

Sales	₹ 86 lakhs
Profit Volume (P/V) Ratio	35%
Fixed Cost excluding interest expenses	₹ 10 lakhs
10% Debt	₹ 55 lakhs
Equity Share Capital of ₹ 10 each	₹ 75 lakhs
Income Tax Rate	40%

(1) Determine company's Return on Capital Employed (Pre-tax) and EPS.
(2) Does the company have a favourable financial leverage?
(3) Calculate operating and combined leverages of the company.
(4) Calculate percentage change in EBIT, if sales increases by 10%.
(5) At **what** level of sales, the Earning before Tax (EBT) of the company will be equal to zero?

Question 13 - Study Material

The Sale revenue of TM excellence Ltd. @ ₹20 Per unit of output is ₹20 lakhs and Contribution is ₹10 lakhs.
At the present level of output the DOL of the company is 2.5.
The company does not have any Preference Shares. The number of Equity Shares is 1 lakh.
Applicable corporate Income Tax rate is 50% and the rate of interest on Debt Capital is 16% p.a.
What is the EPS (At sales revenue of ₹ 20 lakhs) and amount of Debt Capital of the company if a 25% decline in Sales will wipe out EPS.

Computation of Operating Leverage and Beta Analysis

Question 14 - Pyq

The following summarises the percentage changes in operating income, percentage changes in revenues, and betas for four pharmaceutical firms.

Firm	Change in Revenue	Change in Operating Income	Beta
PQR Ltd.	27%	25%	1.00
RST Ltd.	25%	32%	1.15
TUV Ltd.	23%	36%	1.30
WXY Ltd.	21%	40%	1.40

Required:
(i) Calculate the degree of operating leverage for each of these firms. Comment also.
(ii) Use the operating leverage to **explain** why these firms have different beta.

Reverse Working with All Leverages

Question 15 - Pyq

The following details of RST Limited for the year ended 31st March, 2006 are given below:

Operating leverage	1.4 times
Combined leverage	2.8 times
Fixed cost (Excluding interest)	₹ 2.04 lakhs
Sales	₹ 30.00 lakhs
12% Debentures of ₹ 100 each	₹ 21.25 lakhs
Equity Share Capital of ₹ 10 each	₹ 17.00 lakhs
Income tax rate	30 percent

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

Concept of MOS & Leverages

Question 16 - Rtp

Company P and Q are having the same earnings before tax.
However, the margin of safety of Company P is 0.20 and, for Company Q, is 1.25 times that of Company P.
The interest expense of Company P is ₹ 1,50,000 and, for Company Q, is 1/3rd less than that of Company P.
Further, the financial leverage of Company P is 4 and, for Company Q, is 75% of Company P.
Other information is given as below:

Particulars	Company P	Company Q
Profit volume ratio	25%	33.33%
Tax rate	45%	45%

You are required to **PREPARE** Income Statement for both the companies.

Question 17 - Pyq

Financial information for the year 2023-24 of two companies, N Limited and C Limited are as under:

Details	N Limited	C Limited
Equity share capital (₹ 100 each)	₹ 10,00,000	₹ 8,00,000
Debt	₹ 5,00,000@10%	₹ 7,00,000@8%
Fixed Cost	3,00,000	3,36,000
Combined Leverage	8	4.5
Financial Leverage	2	1.5

Calculate: **(i)** Contribution for N Ltd. and C Ltd; **(ii)** Margin of safety in % for N Ltd. and C. Ltd; and **(iii)** Sales of C Ltd.

Missing Interest (additional interest)

Question 18 - Pyq

The following information is related to YZ Company Ltd. for the year ended 31st March, 2020:

Equity share capital (of ₹ 10 each)	₹ 50 lakhs
12% Bonds of ₹ 1,000 each	₹ 37 lakhs
Sales	₹ 84 lakhs
Fixed cost (excluding interest)	₹ 6.96 lakhs
Financial leverage	1.49
Profit-volume Ratio	27.55%
Income Tax Applicable	40%

CALCULATE: **(i)** Operating Leverage; **(ii)** Combined leverage; and **(iii)** Earnings per share.

Question 19 - Pyq

The data of SM Limited for the year ended 31st March 2020 is given below:

Fixed Cost (Excluding Interest) : ₹ 2.25 Lakhs
Sales : ₹ 45 Lakhs
Equity Share Capital of ₹ 10 each : ₹ 38.50 Lakhs
12% Debentures of ₹ 500 each : ₹ 20 Lakhs
Operating Leverage : 1.2
Combined Leverage : 4.8
Income tax rate : 30%

(i) Calculate P/V ratio, Earning per share Financial leverage and Assets turnover.
(ii) If asset turnover of an industry is 1.1, then **comment** on adequacy of assets turnover of SM Limited.
(iii) At **what** level of sales the Earnings before tax (EBT) of SM Limited will be equal to zero?

Miscellaneous questions

Question 20 - Pyq

Information of A Ltd. is given below:

Earnings after tax : 5% on sales
Income tax rate : 50%
Degree of Operating Leverage : 4 times
10% debentures in capital structure : ₹ 3 lakhs
Variable costs: : ₹ 6 lakhs

(i) From the given data **complete** the following statement:

Sales	XXXX
Less: Variable Costs	₹ 6,00,000
Contribution	XXXX
Less: Fixed Cost	XXXX
EBIT	XXXX
Less: Interest Expenses	XXXX
EBT	XXXX
Less: Income tax	XXXX
EAT	XXXX

(ii) Calculate the Financial Leverage and Combined Leverage.
(iii) Calculate the percentage change in earning per share, if sales increased by 5%.

Chapter 5
Investment Decisions

Payback Period

Question 1 - Study Material

Suppose a project costs ₹ 20,00,000 and yields annually a profit of ₹ 3,00,000 after depreciation @ 12.5% (Straight Line Method) but before tax 50%. **What** would be the payback period?

Question 2 - Study Material

Consider the following cash flows from two projects.(In ₹)

No. of years	Project A	Project B
1	Nil	40,000
2	Nil	50,000
3	5,000	1,20,000
4	20,000	10,000
5	50,000	10,000
6	1,50,000	Nil
7	50,000	Nil
8	40,000	Nil
Total	3,15,000	2,30,000

Both projects cost ₹ 1,50,000 each. You are required to compute the payback period for both projects. **Which** project will you prefer?

Payback Reciprocal

Question 3 - Study Material

Suppose a project requires an initial investment of ₹ 20,000 and it would give annual cash inflow of ₹ 4,000. The useful life of the project is estimated to be 5 years. **What** will be the Payback Reciprocal?

Accounting or Average Rate of Return (ARR)

Question 4 - Study Material

Suppose a project requiring an investment of ₹ 10,00,000 yields profit after tax and depreciation as follows:

Years	Profit after tax and depreciation (₹)
1	50,000
2	75,000
3	1,25,000
4	1,30,000
5	80,000
Total	4,60,000

Suppose further that at the end of 5 years, the plant and machinery of the project can be sold for ₹ 80,000. **Calculate** Average Rate of Return?

Question 5 - Study Material

Times Ltd. is going to invest in a project a sum of ₹ 3,00,000 having a life span of 3 years. Salvage value of the machine is ₹ 90,000. The profit before depreciation for each year is ₹1,50,000.
The Profit after Tax and value of Investment in the Beginning and at the End of each year shall be as follows:

Year	Profit before depreciation	Depreciation	Profit after depreciation	Value of investment	
				Beginning	End
1	1,50,000	70,000	80,000	3,00,000	2,30,000
2	1,50,000	70,000	80,000	2,30,000	1,60,000
3	1,50,000	70,000	80,000	1,60,000	90,000

Compute ARR.

Net Present Value (NPV)

Question 6 - Study Material

Compute the net present value for a project with a net investment of ₹ 1,00,000 and the following cash flows if the company's cost of capital is 10%? Net cash flows for year one is ₹ 55,000; for year two is ₹ 80,000 and for year three is ₹ 15,000. [PVIF @ 10% for three years are 0.909, 0.826 and 0.751].

Desirability / Profitability Index

Question 7 - Study Material

There are three projects involving discounted cash outflow of ₹ 5,50,000, ₹ 75,000 and ₹ 1,00,20,000 respectively. Suppose that the sum of discounted cash inflows for these projects are ₹ 6,50,000, ₹ 95,000 and ₹ 1,00,30,000 respectively. **Calculate** the desirability factors for the three projects.

Question 8 - Rtp

K. K. M. M Hospital is considering purchasing an MRI machine. Presently, the hospital is outsourcing the work received relating to MRI machine and is earning commission of
₹ 6,60,000 per annum (net of tax).
The following details are given regarding the machine:

Particulars	(₹)
Cost of MRI machine	90,00,000
Operating cost per annum (excluding Depreciation)	14,00,000
Expected revenue per annum	45,00,000
Salvage value of the machine (after 5 years)	10,00,000
Expected life of the machine	5 years

Assuming tax rate @ 40%, whether it would be profitable for the hospital to purchase the machine?
Give your **RECOMMENDATION** under:
(1) Net Present Value Method, and
(2) Profitability Index Method.
PV factors at 10% are given below:

Year	1	2	3	4	5
PV factor	0.909	0.826	0.751	0.683	0.620

Internal Rate Of Return

Question 9 - Study Material

Calculate the Internal Rate of Return of an Investment of ₹ 1,36,000 which yields the following cash inflows:

YEAR	CASH INFLOWS(₹)
1	30000
2	40000
3	60000
4	30000
5	20000

Modified Internal Rate Of Return

Question 10 - Study Material

An investment of ₹ 1,36,000 yields the following cash inflows. **Determine** the MIRR if the Cost of Capital = 8%

Year	1	2	3	4	5
CFAT(RS)	30,000	40,000	60,000	30,000	20000

Discounted Payback Period

Question 11 - Study Material

Consider the following cash flows from two projects.(In ₹)

No. of years	Project A	Project B
1	Nil	40,000
2	Nil	50,000
3	5,000	1,20,000
4	20,000	10,000
5	50,000	10,000

6	1,50,000	Nil
7	50,000	Nil
8	40,000	Nil
Total	3,15,000	2,30,000

Both projects cost ₹ 1,50,000 each. You are required to compute the Discounted payback period for both projects. **Which** project will you prefer? Using a discount rate as 10%.

Using More than One Technique of Capital Budgeting

Question 12 - Study Material

The Alpha Co. Ltd, is considering the purchase of a new machine. Two alternative machines (A & B) have been suggested, each costing ₹ 4,00,000.

Earnings after taxation but before depreciation are expected to be as follows:

YEAR	CASH FLOWS	
	Machine A	Machine B
1	40,000	1,20,000
2	1,20,000	1,60,000
3	1,60,000	2,00,000
4	2,40,000	1,20,000
5	1,60,000	80,000
Total	7,20,000	6,80,000

The company has a target rate return on capital @ 10 percent and on this basis, you are required to:

(a) Compare profitability of the machines and state which alternative you consider financially preferable;

(b) Compute the payback period for each project; and (c) Compute annual rate of return for each project. [Present value of machine B is higher than that of machine A; Payback period machine A – 3 years 4 months, machine B 2 years 7.2 months; Annual return machine A – 16%, machine B – 14%]

NPV and PI with Uniform Cash Flows

Question 13 - Rtp

Bhilwara Co.'s cost of capital is 10% and it is subject to 50% tax rate. The Company is considering buying a new finishing machine. The machine will cost ₹ 2 Lakhs and will reduce materials waste by an estimated amount of ₹ 50,000 a year. The machine will last for 10 years and will have a zero salvage value.

Assume a straight line method of depreciation on assets.

1. Compute the Annual Cash Inflows, Present Value, Net Present Value, and profitability Index.

2. Should the company purchase the new finishing machine?

Payback, ARR, NPV, IRR and PI

Question 14 - Pyq

C Ltd. is considering investing in a project. The expected original investment in the project will be ₹ 2,00,000, the life of the project will be 5 years with no salvage value. The expected net cash inflows after depreciation but before tax during the life of the project will be as following:

YEAR	1	2	3	4	5
(Rs)	85000	100000	80000	80000	40000

The project will be depreciated at the rate of 20% on original cost. The company is subjected to a 30% tax rate.

Required:

(i) Calculate payback period and average rate of return (ARR).

(ii) Calculate net present value and net present value index, if cost of capital is 10%.

(iii) Calculate internal rate of return.

Note: The P.V. factors are

YEAR	P.V. at 10%	P.V. at 37%	P.V. at 38%	P.V. at 40%
1	0.909	0.730	0.725	0.714
2	0.826	0.533	0.525	0.510
3	0.751	0.389	0.381	0.364
4	0.683	0.284	0.276	0.260
5	0.621	0.207	0.200	0.186

NPV and IRR

Question 15 - Pyq

A company is considering the proposal of taking up a new project which requires an investment of ₹ 400 lakhs on machinery and other assets.

The project is expected to yield the following earnings (before depreciation and taxes) over the next five years:

Year	Earnings (₹ in lakhs)
1	160
2	160
3	180
4	180
5	150

The cost of raising the additional capital is 12% and assets have to be depreciated at 20% on 'Written Down Value' basis. The scrap value at the end of the five years' period may be taken as zero. Income-tax applicable to the company is 50%.

You are required to **calculate** the net present value of the project and advise the management to take appropriate decisions.

Also **calculate** the Internal Rate of Return of the Project.

Note: Present values of Re. 1 at different rates of interest are as follows:

Year	10%	12%	14%	16%
1	0.91	0.89	0.88	0.86
2	0.83	0.80	0.77	0.74
3	0.75	0.71	0.67	0.64
4	0.68	0.64	0.59	0.55
5	0.62	0.57	0.52	0.48

Computing Missing Figure with IRR, PI, NPV

Question 16 - Pyq

Following are the data on a Capital project being evaluated by the management of X Ltd:

Particulars	Project M
Annual cost saving	₹ 40,000
Useful life	4 years
I.R.R	15%
Profitability Index (P.I)	1.064
NPV	?
Cost of capital	?
Cost of project	?
Payback	?
Salvage value	0

Find the missing values considering the following table discount factor only:

Discount factor	15%	14%	13%	12%
1 year	0.869	0.877	0.885	0.893
2 year	0.756	0.769	0.783	0.797
3 year	0.658	0.675	0.693	0.712
4 year	0.572	0.592	0.613	0.636
	2.855	2.913	2.974	3.038

Commission Income foregone

Question 17 - Pyq

A Hospital is considering purchasing a Diagnostic Machine costing ₹ 80,000.

The projected life of the machine is 8 years, and it has an expected Salvage Value of ₹ 6,000 at the end of 8 years. The annual operating cost of the machine is ₹ 7,500.

It is expected to generate revenues of ₹ 40,000 per year for 8 years.

Presently, the Hospital is outsourcing the diagnostic work and is earning Commission Income of ₹ 12,000 per annum, net of taxes.

Required: Whether it would be profitable for the Hospital to purchase the machine?
Give your recommendation under Net Present Value and Profitability Index Methods.
PV Factors at 10% are given below:

Year	1	2	3	4	5	6	7	8
PV Factor	0.909	0.826	0.751	0.683	0.621	0.564	0.513	0.467

[Additional Cash Flow p.a. by Purchasing new Diagnostic Machine: ₹ 11,200; Net Present Value: (17,457); Profitability Index: 0.78]

Mutually Exclusive Decisions – NPV and Simple Payback

Question 18 - Pyq

PR Engineering Ltd. is considering the purchase of a new machine which will carry out some operations which are at present performed by manual labour.
The following related to the alternative models – 'MX' and 'MY' are available:

Particulars	Machine 'MX'	Machine 'MY'
Cost of Machine	₹ 8,00,000	₹ 10,20,000
Expected Life	6 year	6 year
Scrap value	₹ 20,000	₹ 30,000

Estimated Net Income before Depreciation and Tax are as under:

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Machine MX	2,50,000	2,30,000	1,80,000	2,00,000	1,80,000	1,60,000
Machine MY	2,70,000	3,60,000	3,80,000	2,80,000	2,60,000	1,85,000

Depreciation will be charged on a Straight Line basis. Tax rate is 30%
You are **required** to:
(1) **Calculate** the payback period of each proposal.
(2) **Calculate** the Net Present Value of each proposal, if the PV Factor at 10% is 0.909, 0.826, 0.751, 0.683, 0.621 and 0.564.
Which proposal would you recommend and why?

Mutually Exclusive Projects unequal life

Question 19 - Pyq

The Management of P Limited is considering selecting a machine out of the mutually exclusive machines.
The company's Cost of Capital is 12% and Corporate Tax Rate for the Company is 30%.
Details of the machines are as follows:

Particulars	Machine – I	Machine – II
Cost of Machine	₹ 10,00,000	₹ 15,00,000
Expected life	5 years	6 years
Annual Income before Tax Depreciation	₹ 3,45,000	₹ 4,55,000

Depreciation is to be charged on a straight line basis. You are **required** to:
(1) **Calculate** the Discounted Payback Period, Net Present Value and Internal Rate of Return for each machine.
(2) **Advise** the Management of P Limited as to which Machine they should take up.

Question 20 - Pyq

A Ltd. is considering the purchase of a machine which will perform some operations which are at present performed by workers. Machines X and Y are alternative models.
The following details are available:

Particulars	Machine X (₹)	Machine Y (₹)
Cost of machine	1,50,000	2,40,000
Estimated life of machine	5 years	6 years
Estimated cost of maintenance p.a.	7,000	11,000
Estimated cost of indirect material p.c.	6,000	8,000
Estimated savings in scrap p.a.	10,000	15,000
Estimated cost of supervision p.a.	12,000	16,000
Estimated savings in wages p.a.	90,000	1,20,000

Depreciation will be charged on a straight line basis. The tax rate is 30%.

Evaluate the alternatives according to:
(i) Average rate of return method, and
(ii) Present value index method assuming cost of capital being 10%.

NPV – IRR Conflict

Question 21 - Pyq

The Cash flows of projects C and D are reproduced below:

Project	C0	C1	C2	C3	NPV at 10%	IRR
C	-₹ 10,000	+ 2,000	+ 4,000	+ 12,000	+ ₹ 4,139	26.5%
D	-₹ 10,000	+ 10,000	+ 3,000	+ 3,000	+ ₹ 3,823	37.6%

(i) Why is there a conflict of ranking?
(ii) Why should you recommend project C in spite of a lower internal rate of return?

Discount Rate	1	2	3
10%	0.9090	0.8264	0.7513
14%	0.8772	0.7695	0.6750
15%	0.8696	0.7561	0.6575
30%	0.7692	0.5917	0.4552
40%	0.7143	0.5102	0.3644

NPV & PI Calculation

Question 22 - Pyq

SRT Limited manufactures steel rods and is now considering purchasing a new aluminium smelting and moulding plant. This plant will have the cost of ₹20,00,000 to purchase and install the plant. It has a useful life of 5 years with a residual value of ₹1,00,000. Production and sales from the new plant are expected to be 1,00,000 units per year.

Other estimates are as follows:

Selling price	₹150 per unit
Direct Cost	₹100 per unit

Fixed cost (including depreciation) is ₹8,00,000 per annum. Marketing and promotion costs not included in the above will be ₹1,00,000 and ₹1,60,000 for years 1 and 2, respectively.
Additionally , investment in debtors and stocks will increase in year 1 by ₹1,50,000and ₹2,00,000 respectively. Creditors will also increase by ₹1,00,000 in year 1.
Thus , Debtors, stocks and creditors will be recouped at the end of the fifth year.
The cost of capital is 18%. Corporate tax is 30% and is paid in the year in which profits are made. Depreciation is tax deductible. The company follows a straight line method of depreciation.
Required:
(i) **Calculate** the Net Present Value and Profitability Index of the project.
(ii) **Advise** SRT Limited whether the plant should be purchased.
The PV factors at 18% are:

Year	1	2	3	4	5
PV factor	0.847	0.718	0.609	0.516	0.437

Treatment of subsidy

Question 23 - Pyq

HCP Ltd. is a leading manufacturer of railway parts for passenger coaches and freight wagons. Due to high wastage of material and quality issues in production, the General Manager of the company is considering the replacement of machine A with a new CNC machine B.
Machine A has a book value of ₹4,80,000 and remaining economic life is 6 years. It could be sold now at ₹1,80,000 and zero salvage value at the end of sixth year.
The purchase price of Machine B is ₹24,00,000 with an economic life of 6 years. It will require ₹1,40,000 for installation and ₹60,000 for testing. **Subsidy** of 15% on the purchase price of machine B will be received from the Government at the end of 1st year. Salvage value at the end of sixth year will be ₹3,20,000.
The General manager estimates that the annual savings due to installation of Machine B include a reduction of three skilled workers with annual salaries of ₹1,68,000 each, ₹4,80,000 from reduced wastage of materials and defectives and ₹3,50,000 from loss in sales due to delay in execution of purchase orders.
Operation of Machine B will require the services of a trained technician with an annual salary of ₹3,90,000 and annual operation and maintenance cost will increase by ₹1,54,000.

The company's tax rate is 30% and its required rate of return is 14%.
The company follows a straight line method of depreciation.
Ignore tax savings on loss due to sale of existing machine.
The present value factors at 14% are:

Years	0	1	2	3	4	5	6
PV Factor	1	0.877	0.769	0.675	0.592	0.519	0.456

Required:
(i) **Calculate** the Net Present Value and profitability Index and advise the company for a replacement decision.
(ii) Also **Calculate** the discounted pay-back period.

100% Depreciation in year one

Question 24 - Study Material, Pyq

Modern Enterprises Ltd. is considering the purchase of a new computer system for its Research and Development Division, which would cost ₹ 35 lakhs. The operation and maintenance costs (excluding depreciation) are expected to be ₹ 7 lakhs per annum. It is estimated that the useful life of the system would be 6 years, at the end of which the disposal value is expected to be ₹ 1 lakh.
The tangible benefits expected from the system in the form of reduction in designing costs would be ₹ 12 lakhs per annum. Besides, the disposal of used drawing, office equipment and furniture, initially, is anticipated to net ₹ 9 lakhs. Capital expenditure in research and development would attract 100% write-off for tax purposes. The gains arising from disposal of used assets May be considered tax-free. The company's effective tax rate is 50%. The average cost of capital to the company is 12%.
The present value factors at 12% discount rate are:

Year	PVF
1	0.892
2	0.797
3	0.711
4	0.635
5	0.567
6	0.506

After appropriate analysis of cash flows, please **advise** the company of the financial viability of the proposal.

Concept of additional and allocated overheads

Question 25 -

ABC Ltd. manufactures toys and other gift items. The R & D Division has come up with a product that would make a good promotional gift for office equipment dealers. As a result of efforts by the sales personnel, the Firm has commitments for this product.
To produce the quantity demanded, the company will need to buy additional machinery and rent additional space. It appears that about 25,000 square feet will be needed. 12,500 square feet of presently unused space, but leased at the rate of ₹ 3 per square foot per year, is available. There is another 12,500 square feet available at an annual rent of ₹ 4 per square foot.
The Machinery will be purchased for ₹ 9,00,000. It will require ₹ 30,000 for modifications, ₹ 60,000 for installation and ₹ 90,000 for testing. The machinery will have a salvage value of about ₹ 1,80,000 at the end of the third. No additional General Overheads Costs are expected to be incurred.
The estimated revenues and costs for this product for the three years have been developed as follows:(in ₹)

Particulars	Year I	Year II	Year III
Sales	10,00,000	20,00,000	8,00,000
Less: Material and	4,00,000	7,50,000	3,50,000
Labour	40,000	75,000	35,000
Overheads allocated	50,000	50,000	50,000
Rent	3,00,000	3,00,000	3,00,000
Depreciation			
Earnings Before	2,10,000	8,25,000	65,000
Taxes	1,05,000	4,12,500	32,500
Less: Taxes			
Earnings After Taxes	**1,05,000**	**4,12,500**	**32,500**

If the Company sets a required rate of return of 20% after taxes, **should** this product be manufactured?

Repair – Replace – Conflict

Question 26 - Pyq

S Engineering Company is considering replacing or repairing a particular machine, which has just broken down. Last year this machine cost ₹ 20,000 to run and maintain. These costs have been increasing in real terms in recent years with the age of the machine. A further useful life of 5 years is expected, if immediate repairs of ₹ 19,000 are carried out. If the machine is not repaired it can be sold immediately to realise about ₹ 5,000 (Ignore loss/gain on such disposal).

Alternatively, the company can buy a new machine for ₹ 49,000 with an expected life of 10 years with no salvage value after providing depreciation on a straight line basis. In this case, running and maintenance costs will reduce to ₹ 14,000 each year and are not expected to increase much in real terms for a few years at least. S Engineering Company regards a normal return of 10% p.a. after tax as a minimum requirement on any new investment. Considering capital budgeting techniques, **which** alternative will you choose? Take the corporate tax rate of 50% and assume that depreciation on a straight line basis will be accepted for tax purposes also. Given cumulative present value of Re. 1 p.a. at 10% for 5 years ₹ 3.791, 10 years ₹ 6.145.

Retain or Replace – Incremental NPV

Question 27 - Pyq

An existing company has a machine which has been in operation for two years , its estimated remaining useful life is 4 years with no residual value in the end. Its current Market value is Rs 3 lakhs. The management is considering a proposal to purchase an improved model of a machine which gives increased output.

The details are as under :

Particulars	Existing Machine	New Machine
Purchase price	Rs 6,00,000	Rs 10,00,000
Estimated life	6 years	4 years
Residual value	0	0
Annual operating days	300	300
Operating hours per day	6	6
Selling price per unit	Rs 10	Rs 10
Material cost per unit	Rs 2	Rs 2
Output per hours in unit	20	40
Labour cost per hour	Rs 20	Rs 30
Fixed overhead per annum excluding depreciation	Rs 1,00,000	Rs 60,000
Working capital	Rs 1,00,000	Rs 2,00,000
Income tax rate	30%	30%

Assuming that the – cost capital is 10% and the company uses a written down value of depreciation @ 20% and it has several machines in 20% block. **Advise** the management on the Replacement of Machine as per the NPV method.

The discounting factors table given below :

Discounting factors	Year 1	Year 2	Year 3	Year 4
10%	0.909	0.826	0.751	0.683

Question 28 - Mtp

WX Ltd. is considering a proposal to replace an existing machine.

The details of existing machine and new machine are as under:

Particulars	Existing Machine	New Machine
Cost of Machine	₹ 3,75,000	₹ 5,25,000
Estimated life (in years)	10	5
Present Book value	₹ 1,87,500	-

(i) Out of the Life of 10 years of present machine, five years have already lapsed. The management can continue with this machine for the remaining lifetime.
(ii) The activity level of both the machines is the same.
(iii) Residual value of the new machine at the end of the life - ₹. 60,000.
(iv) There will be a saving of ₹. 2,40,000 in the variable cost each year by new machine.
(v) If the old machine is sold, then it will fetch ₹. 90,000.
(vi)WX Ltd. expects a minimum return of 11 % on the investment.
(vii) Corporate tax - 30%
(viii) No depreciation is to be charged in the year of sale.

(ix) Present value of ₹. 1 @ 11% is as under:

Year	1	2	3	4	5
P/V Factor	0.901	0.812	0.731	0.659	0.593

You are required to **comment** on the suitability of replacement of the old machine.

Only outflow & unequal life

Question 29 - Pyq

Company X is forced to choose between two machines A and B. The two machines are designed differently, but have identical capacity and do exactly the same job. Machine A costs ₹ 1,50,000 and will last for 3 years. It costs ₹ 40,000 per year to run. Machine B is an 'economy' model costing only ₹ 1,00,000, but will last only for 2 years, and costs ₹ 60,000 per year to run. These are real cash flows. The costs are forecasted in rupees of constant purchasing power. Ignore tax. Opportunity cost of capital is 10 percent.
Which machine company X should buy?

Question 30 - Pyq

A Company is required to choose between two machines A and B. The two machines are designed differently, but have identical capacity to do exactly the same job. Machine A costs ₹ 6,00,000 and will last for 3 years. It costs ₹ 1,20,000 per year to run.
Machine B is an Economy Model costing ₹ 4,00,000 but will last only for two years, and cost ₹ 1,80,000 per year to run. These are real cash flows. The costs are forecasted in rupees of constant purchasing power. Opportunity Cost of Capital is 10%. Ignore tax.
Which Machine should the Company buy?
Given: PVIF0.10,1= 0.9091, PVIF0.10,2 = 0.8264, PVIF0.10,3= 0.7513.

Replacing Part or Servicing

Question 31 - Mtp

Rambow Ltd. is contemplating purchasing machinery that would cost ₹ 10,00,000 plus GST @ 18% at the beginning of year 1. Cash inflows after tax from operations have been estimated at ₹ 2,56,000 per annum for 5 years.
The company has two options for the smooth functioning of the machinery - **one** is service, and
Another is replacement of parts. The company has the option to service a part of the machinery at the end of each of the years 2 and 4 at ₹ 1,00,000 plus GST @ 18% for each year. In such a case, the scrap value at the end of year 5 will be ₹ 76,000. However, if the company decides not to service the part, then it will have to be replaced at the end of year 3 at ₹ 3,00,000 plus GST@ 18% and in this case, the machinery will work for the 6th year also and get operational cash inflow of ₹ 1,86,000 for the 6th year. It will have to be scrapped at the end of year 6 at ₹ 1,36,000.
Assume cost of capital at 12% and GST paid on all inputs including capital goods are eligible for input tax credit in the same month as and when incurred.
(i) DECIDE whether the machinery should be purchased under option 1 or under option 2 or it shouldn't be purchased at all.
(ii) If the supplier gives a discount of ₹ 90,000 for purchase, **WHAT** would be your decision?
Note: The PV factors at 12% are:

Year	0	1	2	3	4	5	6
PV Factor	1	0.8928	0.7972	0.7118	0.6355	0.5674	0.5066

New product introduced

Question 32 - Pyq

PD Ltd. an existing company, is planning to introduce a new product with a projected life of 8 years.
Project cost will be ₹ 2,40,00,000.
At the end of 8 years no residual value will be realized. Working capital of ₹ 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 are 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 purposes.

(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.

Investment at Different Point of time – NPV Based Evaluation

Question 33 - Study Material

XYZ Ltd. is planning to introduce a new product with a project life of 8 years. Initial equipment cost will be ₹ 3.5 crores. Additional equipment costing ₹ 25,00,000 will be purchased at the end of the third year from the cash inflow of this year. At the end of 8 years, the original equipment will have no resale value, but additional equipment can be sold for ₹ 2,50,000. A working capital of ₹ 40,00,000 will be needed and it will be released at the end of eighth year. The project will be financed with a sufficient amount of equity capital.

The sales volumes over eight years have been estimated as follows:

Year	1	2	3	4-5	6-8
Units	72,000	1,08,000	2,60,000	2,70,000	1,80,000

A sales price of ₹ 240 per unit is expected and variable expenses will amount to 60% of sales revenue. Fixed cash operating costs will amount ₹ 36,00,000 per year. The loss of any year will be set off from the profits of subsequent two years. The company is subject to 30 per cent tax rate and considers 12 percent to be an appropriate after tax cost of capital for this project.

The company follows a straight line method of depreciation.

CALCULATE the net present value of the project and advise the management to take appropriate decisions.

Note: The PV factors at 12% are

Year	1	2	3	4	5	6	7	8
PV Factor	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404

Capital Rationing

Question 34 - Pyq

A company has ₹ 1,00,000 available for investment and has identified the following four investments in which to invest.

Project	Investment (₹)	NPV (₹)
C	40,000	20,000
D	1,00,000	35,000
E	50,000	24,000
F	60,000	18,000

You are required to **optimize** the returns from a package of projects within the capital spending limit if:

(i) The projects are independent of each other and are divisible.

(ii) The projects are not divisible

Question 35 - Pyq

S. Ltd. has ₹ 10,00,000 allocated for capital budgeting purposes.

The following proposals and associated profitability indexes have been determined:

Project	Amount (₹)	Profitability Index (₹)
1	3,00,000	1.22
2	1,50,000	0.95
3	3,50,000	1.20

4	4,50,000	1.18
5	2,00,000	1.20
6	4,00,000	1.05

Which of the above investments should be undertaken? Assume that projects are indivisible and there is no alternative use of the money allocated for capital budgeting.

Traditional approach

Question 36 - Mtp

Superb Ltd. constructs customized parts for satellites to be launched by the USA and Canada.
The parts are constructed in eight locations (including the central headquarters) around the world.
The Finance Director, Ms. Kuthrapali, chooses to implement video conferencing to speed up the budget process and save travel costs.
She finds that, in earlier years, the company sent two officers from each location to the central headquarters to discuss the budget twice a year.
The average travel cost per person, including airfare, hotels and meals, is ₹ 27,000 per trip.
The cost of using video conferencing is ₹ 8,25,000 to set up a system at each location plus ₹ 300 per hour average cost of telephone time to transmit signals. A total 48 hours of transmission time will be needed to complete the budget each year.
The company depreciates this type of equipment over five years by using a straight line method.
An alternative approach is to travel to local rented video conferencing facilities, which can be rented for ₹ 1,500 per hour plus ₹ 400 per hour average cost for telephone charges.
You are a Senior Officer of the Finance Department. You have been asked by Ms. Kuthrapali to **EVALUATE** the proposal and **SUGGEST** if it would be worthwhile for the company to implement video conferencing.

Chapter 6
Dividend Decisions

Walter Model

Question 1 - Study Material

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

Net Profit	₹ 30 lakhs
Outstanding 12% preference shares	₹ 100 lakhs
No. of equity shares	3 lakhs
Return on Investment	20%
Cost of capital i.e. (Ke)	16%

COMPUTE the approximate dividend pay-out ratio so as to keep the share price at ₹ 42 by using **Walter's model**?

Question 2 - Study Material

The following information pertains to M/s XY Ltd:

Earnings of the Company	5,00,000
Dividend Payout ratio	60%
No. of shares outstanding	1,00,000
Equity capitalization rate	12%
Rate of return on investment	15

CALCULATE:

(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 the market value of Company's share at that payout ratio?

Question 3 - Rtp

The earnings per share of a company is ₹ 10 and the rate of capitalisation applicable to it is 10 percent. The company has three options of paying dividend i.e. **(i)** 50%, **(ii)** 75% and **(iii)** 100%.

CALCULATE the market price of the share as per **Walter's model** if it can earn a return of (a) 15, (b) 10 and (c) 5 per cent on its retained earnings.

Question 4 - Rtp

The following figures have been collected from the annual report of ABC Ltd. for the current financial year:

Net Profit	₹ 75 lakhs
Outstanding 12% preference shares	₹ 250 lakhs
No. of equity shares	7.50 lakhs
Return on Investment	20%
Cost of capital i.e. (Ke)	16%

(a) COMPUTE the approximate dividend pay-out ratio so as to keep the share price at ₹ 42 by using **Walter's model**?

(b) DETERMINE the optimal dividend pay-out ratio and the price of the share at such pay-out.

(c) PROVE that the dividend pay-out ratio as determined above in (b) is optimum by using random pay-out ratio.

Gordon Model

Question 5 - Study Material, Mtp

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

Net Profit	₹ 30 lakhs
Outstanding 12% preference shares	₹ 100 lakhs
No. of equity shares	3 lakhs
Return on Investment	20%
Cost of capital i.e. (Ke)	16%

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

Question 6 - Mtp

The annual report of XYZ Ltd. provides the following information for the Financial Year 2019-20:

Particulars	Amount (₹)
Net Profit	78 lakhs
Outstanding 15% preference shares	120 lakhs
No. of equity shares	6 lakhs
Return on Investment	20%
Cost of capital i.e. (Ke)	16%

Calculate price per share using **Gordon's Model** when dividend pay-out is-
1. 30%; **2.** 50%; **3.** 100%.

Multi Method

Question 7 - Pyq

The following information is supplied to you:

Total Earning	₹ 40 lakhs
No. of Equity Shares (of ₹ 100 each)	4,00,000
Dividend Per Share	₹ 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

Gordon Multiple Growth Rate

Question 8 -

D Ltd. Is foreseeing a growth rate of 12% per annum in the next two years. The growth rate is likely to be 10% for the third and fourth year. After that, the growth rate is expected to stabilise at 8% per annum. If the last dividend was ₹ 1.50 per share and the investor's required rate of return is 16%, **determine** the current value of equity share of the company. The P.V. factors at 16% are:

Year	1	2	3	4
PVF	0.862	0.743	0.641	0.552

Question 9 - Pyq

X Ltd. is a multinational company. Current market price per share is ₹ 2,185. During the F.Y. 2020-21, the company paid ₹ 140 as dividend per share. The company is expected to grow @ 12% p.a. for the next four years, then 5% p.a. for an indefinite period. Expected rate of return of shareholders is 18% p.a.

(i) Find out intrinsic value per share.
(ii) State whether shares are overpriced or underpriced.

Year	1	2	3	4	5
Discounting Factor @ 18%	0.847	0.718	0.608	0.515	0.436

MM Approach (Dividend Irrelevance)

Question 10 - Study Material

RST Ltd. has a capital of ₹ 10,00,000 in equity shares of ₹ 100 each. The shares are currently quoted at par. The company proposes to declare a dividend of ₹ 10 per share at the end of the current financial year. The capitalization rate for the risk class of which the company belongs is 12%.

COMPUTE market price of the share at the end of the year, if

(i) Dividend is not declared ?
(ii) Dividend is declared ?
(iii) Assuming that the company pays the dividend and has net profits of ₹ 5,00,000 and makes new investments of ₹ 10,00,000 during the period, how many new shares must be issued? Use the MM model.

Question 11 - Rtp

Aakash Ltd. has 10 lakh equity shares outstanding at the start of the accounting year 2021. The existing market price per share is ₹ 150. Expected dividend is ₹ 8 per share .
The rate of capitalization appropriate to the risk class to which the company belongs is 10%.

(i) Calculate the market price per share when expected dividends are : **(a)** declared , and **(b)** not declared , based on the Miller – Modigliani approach.
(ii) Calculate number of shares to be issued by the company at the end of the accounting year on the assumption that the net income for the year is ₹ 3 crore , investment budget is ₹ 6 crores, when **(a)** Dividends are declared, and **(b)** Dividends are not declared.
(iii) Proof that the market value of the shares at the end of the accounting year will remain unchanged irrespective of whether **(a)** Dividends are declared , or **(ii)** Dividends are not declared.

Question 12 - Mtp
M Ltd. belongs to a risk class for which the capitalization rate is 12%. It has 40,000 outstanding shares and the current market price is ₹ 200. It expects a net profit of ₹ 5,00,000 for the year and the Board is considering a dividend of ₹ 10 per share.
M Ltd. requires to raise ₹ 10,00,000 for an approved investment expenditure.
ILLUSTRATE, how the MM approach affects the value of M Ltd. if dividends are paid or not paid.

Miscellaneous Questions

Question 13 - Study Material
Mr H is currently holding 1,00,000 shares of HM ltd, and currently the share of HM ltd is trading on Bombay Stock Exchange at ₹ 50 per share. Mr A has a policy to re-invest the amount of any dividend received into the shared back again of HM ltd. If HM ltd has declared a dividend of ₹ 10 per share, please **determine** the number of shares that Mr A would hold after he re-invests dividend in shares of HM ltd.

Question 14 - Study Material
Following information is given pertaining to DG ltd.
No. of shares outstanding : 1 lakh shares
Earnings Per share : ₹ 25 per share
P/E Ratio : 20
Book Value per share : ₹ 400 per share
If a company decides to repurchase 5,000 shares, at the prevailing market price, **what** is the resulting book value per share after repurchasing.

Question 15 - Rtp
HM Ltd. is listed on Bombay Stock Exchange which is currently being evaluated by Mr. A on certain parameters.
Mr. A collated following information:
(a) The company generally gives a quarterly interim dividend. ₹ 2.5 per share is the last dividend declared.
(b) The company's sales are growing by 20% on a 5-year Compounded Annual Growth Rate (CAGR) basis, however the company expects following retention amounts against probabilities mentioned as contention is dependent upon cash requirements for the company. Rate of return is 10% generated by the company.

Situation	Prob.	Retention Ratio
A	30%	50%
B	40%	60%
C	30%	50%

(c) The current risk-free rate is 3.75% and with a beta of 1.2, the company is having a risk premium of 4.25%. You are required to help Mr. A in **calculating** the current market price using Gordon's formula.

Margin of safety Topics

Graham Dodd

Question 16 - Study Material
The earnings per share of a company is ₹ 30 and dividend payout ratio is 60%. Multiplier is 2.
DETERMINE the price per share as per Graham & Dodd model.

Linter Model

Question 17 - Study Material
Given the last year's dividend is ₹ 9.80, speed of adjustment = 45%, target payout ratio 60% and EPS for current year ₹ 20.
COMPUTE current year's dividend using Linter's model.

Working Capital Management

Operating Cycle

Question 1 - Pyq

Following information is forecasted by CS Limited for the year ending 31st March:

Particulars	Opening Balance (₹)	Closing Balance (₹)
Raw Materials	45,000	65,356
Work-in-Progress	35,000	51,300
Finished Goods	60,181	70,175
Debtors	1,12,123	1,35,000
Creditors	50,079	70,469

Other Particulars	Amount (₹)
Annual Purchases of Raw Material (all credit)	4,00,000
Annual Cost of Production	7,50,000
Annual Operating Cost	9,50,000
Annual Sales (all credit)	11,00,000
Annual Cost of Goods Sold	9,15,000

Take 1 year = 365 days. **Calculate** the following:
(1) Net Operating Cycle Period, **(2)** Number of Operating Cycles in a year, and **(3)** Amount of Working Capital required.

Question 2 - Pyq

The following information is available for SK Limited for the year ended on 31st March,2024:

Particulars	₹
Cost of production	15,48,000
Cost of goods sold	14,61,000
Average stock of work-in-progress	94,600
Average stock of finished goods	2,43,500
Administration and Selling expenses	4,14,000
Receivables collection period	36 days
Raw Material Storage period	65 days
Creditors payment period	63 days

You are required to **calculate** the working capital requirement by operating cycle method.
Assume a 360 days year.

Question 3 - Pyq

The following information is provided by MNP Ltd. for the year ending 31st March, 2020:

Raw Material Storage period	45 days
Work-in-Progress conversion period	20 days
Finished Goods storage period	25 days
Debt Collection period	30 days
Creditors payment period	60 days
Annual Operating Cost (Including Depreciation of ₹ 2,50,000)	₹ 25,00,000

Assume 360 days in a year.
You are required to **calculate:**
(i) Operating Cycle period
(ii) Number of Operating Cycle in a year.
(iii) Amount of working capital required for the company on a cost basis.
(iv) The company is a market leader in its product, and it has no competitor in the market.
Based on a market survey it is planning to discontinue sales on credit and deliver products based on pre - payments in order to reduce its working capital requirement substantially.
You are required to **compute** the reduction in working capital requirement in such a scenario.

Question 4 - Study Material

Following information is forecasted by R Limited for the year ending 31st March, 2020 :

Particulars	Balance as at 31st March , 2020 (₹ in Lakh)	Balance as at 31st March , 2019 (₹ in lakh)
Raw material	65	45
Work in progress	51	35
Finished goods	70	60
Receivables	135	112
Payables	71	68
Annual purchases of raw material (all credit)	400	
Annual cost of production	450	
Annual cost of goods sold	525	
Annual operating cost	325	
Annual sales (all credit)	585	

You may take one year as equal to 365 days.You are required to **CALCULATE :**

(i) Net operating cycle period.

(ii) Number of operating cycles in the year.

(iii) Amount of working capital requirement .

Working Capital Forecast – Total Approach & Cash Cost Approach.

Question 5 - Study Material

On 1st January, the Managing Director of Naureen Ltd. wishes to know the amount of working capital that will be required during the year. From the following information **prepare** the working capital requirements forecast.

Production during the previous year was 60,000 units.

It is planned that this level of activity would be maintained during the present year.

The expected ratios of the cost to selling prices are Raw Materials 60%, Direct Wages 10% and Overheads 20%. Raw materials are expected to remain in store for an average of 2 months before issue to production. Each unit is expected to be in process for one month, the raw materials being fed into the pipeline immediately and the labour and overhead costs are 50% complete.

Finished goods will stay in the warehouse awaiting dispatch to customers for approximately 3 months.

Credit allowed by creditors is 2 months from the date of delivery of raw materials.

Credit allowed to debtors is 3 months from the date of dispatch. Selling price is ₹ 5 per unit.

There is a regular production and sales cycle.

Wages and overheads are paid on the 1st of each month for the previous month.

The company normally keeps cash in hand to the extent of ₹ 20,000.

Solve by **A. Total approach and B. Cash cost approach.**

Question 6 - Pyq

The following information has been extracted from the records of a company:

Product Cost Sheet	₹ Per Unit
Raw Materials	45
Direct Labour	20
Overheads	40
Total	105
Profit	15
Selling Price	120

- Raw materials are in stock for an average of two months.
- The materials are in process on an average for 4 weeks. The degree of completion is 50%.
- Finished goods stock on an average is for one month.
- Time lag in payment of wages and overheads is 1 ½ weeks.
- Time lag in receipt of proceeds from debtors is 2 months.
- Credit allowed by suppliers is one month.
- 20% of the output is sold against cash.
- The company expects to keep a cash balance of ₹ 1,00,000.
- The company is poised for a manufacture of 1,44,000 units in the year.Take 52 weeks per annum.

You are required to **prepare** a statement showing the Working Capital Requirements of the Company.

Question 7 - Rtp

Kalyan limited has provided you the following information for the year 2021-22:
By working at 60% of its capacity the company was able to generate sales of ₹ 72,00,000.
Direct labour cost per unit amounted to ₹ 20 per unit.
Direct material cost per unit was 40% of the selling price per unit.
Selling price was 3 times the direct labour cost per unit. Profit margin was 25% on the total cost.
For the year 2022-23, the company makes the following estimates:
Production and sales will increase to 90% of its capacity. Raw material per unit price will remain unchanged. Direct expense per unit will increase by 50%. Direct labour per unit will increase by 10%. Despite the fluctuations in the cost structure, the company wants to maintain the same profit margin on sales.
Raw materials will be in stock for one month whereas finished goods will remain in stock for two months.
Production cycle is for 2 months. Credit period allowed by suppliers is 2 months.
Sales are made to three zones:

Zone	Percentage of sale	Mode of Credit
A	50%	Credit period of 2 months
B	30%	Credit period of 3 months
C	20%	Cash Sales

There are no cash purchases and cash balance will be ₹ 1,11,000
The company plans to apply for a working capital financing from the bank for the year 2022 -23.
ESTIMATE Net Working Capital of the Company receivables to be taken on sales and also **COMPUTE** the maximum permissible bank finance for the company using 3 criteria of Tandon Committee Norms. (Assume stock of finished goods to be a core current asset)

Question 8 - Pyq

A Performa Cost Sheet of a Company provides the following data:

Particulars	Cost Per Unit (₹)
Raw Material	117
Direct Labour	49
Factory Overheads(Includes Depreciation of ₹ 18 per unit at budgeted level of activity)	98
Total Cost	264
Profit	36
Selling Price	300

Following additional information is available:

Average raw material in stock : 4 weeks
Average work-in-progress stock : 2 weeks
(% completion with respect to Materials is 80% and Labour and Overheads is 60%)
Finished goods in stock : 3 weeks
Credit period allowed to debtors : 6 weeks
Credit period availed from suppliers : 8 weeks
Time lag in payment of wages : 1 week
Time lag in payment of overheads : 2 weeks

The company sells one-fifth of the output against cash and maintains cash balance of ₹ 2,50,000.
Prepare a statement showing an estimate of working capital needed to finance a budgeted activity level of 78,000 units of production. You may assume that production is carried on evenly throughout the year and wages and overheads accrue similarly.

Question 9 - Pyq

MNO Ltd. has furnished the following cost data relating to the year ending of 31st March, 2008:

Particulars	Amount (₹ In Lakhs)
Sales	450
Material Consumed	150
Direct Wages	30
Factory Overheads (100% variable)	60
Office and Administrative Overheads (100% variable)	60
Selling Overheads	50

The company wants to make a forecast of working capital needed for the next year and anticipates that:

- Sales will go up by 100%.

- Selling expenses will be ₹ 150 Lakhs.
- Stock holdings for the next year will be – Raw material for two and half months, work-in-progress for one month, Finished goods for half month and Book debts for one and half month.
- Lag in payment will be 3 months for creditors, 1 month for wages and half month for Factory, Office and Administrative and Selling Overheads.

You are required to **Prepare** statement showing Working Capital Requirements for next year, and

Working Capital Forecast of New Company

Question 10 - Pyq

A **newly formed** company has applied to the Commercial Bank for the first time for financing its working capital requirements.

The following information is available about the projections for the current year:

Particulars	Per unit (₹)
Raw Material	40
Direct Labour	15
Overhead	30
Total Cost	85
Profit	15
Sales	100

Other information:

Raw material in stock: Average 4 weeks consumption,

Work-in-Progress (completion stage, 50 percent): on an average half a month.

Finished goods in stock: on an average, one month.

Credit allowed by suppliers is one month.

Credit allowed to debtors is two months.

Average time lag in payment of wages is 1 ½ weeks and 4 weeks in overhead expenses.

Cash in hand and at bank is desired to be maintained at ₹ 50,000. All sales are on credit basis only.

Prepare a statement showing an estimate of working capital needed to finance an activity level of 96,000 units 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.

Question 11 - Rtp

PQR Ltd., a company **newly commencing** business in the year 2021-22, provides the following projected Profit and Loss Account:

	(₹)	(₹)
Sales		5,04,000
Cost of goods sold		3,67,200
Gross Profit		1,36,800
Administrative Expenses	33,600	
Selling Expenses	31,200	64,800
Profit before tax		72,000
Provision for taxation		24,000
Profit after tax		48,000
The cost of goods sold has been arrived at as under:		
Materials used	2,01,600	
Wages and manufacturing Expenses	1,50,000	
Depreciation	56,400	
	4,08,000	
Less: Stock of Finished goods (10% of goods produced not yet sold)	40,800	
	3,67,200	

The figure given above relates only to finished goods and not to work-in-progress. Goods equal to 15% of the year's production (in terms of physical units) will be in process on the average requiring full materials but only 40% of the other expenses.

The company believes in keeping materials equal to two months' consumption in stock.

All expenses will be paid one month in advance. Suppliers of materials will extend 1 -1/2 months credit. Sales will be 20% for cash and the rest at two months' credit. 70% of the Income tax will be paid in advance in quarterly installments. The company wishes to keep ₹ 19,200 in cash. 10% must be added to the estimated figure for unforeseen contingencies. **PREPARE** an estimate of working capital.

Domestic sale + Exports

Question 12 - Pyq

The Management of MNP Company Ltd is planning to expand its business and consult you to prepare an estimated Working Capital Statement.

The records of the Company reveal the following annual information:

Particulars	Amount (₹)
Sales – Domestic at one Month's Credit	24,00,000
Export at three Month's Credit (Sales Price 10% below Domestic Price)	10,80,000
Materials used (Suppliers extend two months credit)	9,00,000
Lag in Payment of Wages – ½ Month	7,20,000
Lag in Payment of Manufacturing Expenses (Cash) – 1 month	10,80,000
Lag in Payment of Administration Expenses – 1 month	2,40,000
Sales Promotion Expenses payable quarterly in advance	1,50,000
Income Tax payable in four instalments of which one falls in the next Financial Year	2,25,000

Rate of Gross Profit is 20%. Ignore Work-in-Progress and Depreciation.

The Company keeps one Month's Stock of Raw Materials and Finished Goods (each) and believes in keeping ₹ 2,50,000 available to it including the Overdraft Limit of ₹ 75,000 not yet utilized by the Company.

The Management is also of the opinion to make 12% Margin for Contingencies on the computed figures.

You are required to **prepare** the estimated Working Capital Statement for the next year.

Double Shift Working

Question 13 - Study Material

Samreen Enterprises has been operating its manufacturing facilities till 31.3.2010 on single shift working with the following cost structure:

Particulars	Per Unit (₹)
Cost of Materials	6
Wages (out of which 40% fixed)	5
Overheads (out of which 80% fixed)	5
Profit	2
Selling Price	18
Sales during 2009-10 is ₹ 4,32,000. As at 31.3.2010 the company held:	
Stock of raw materials (at cost)	₹ 36,000
Work-in-progress (valued at prime cost)	₹ 22,000
Finished goods (Valued at total cost)	₹ 72,000
Sundry debtors	₹ 1,08,000

In view of increased market demand, it is proposed to double production by working an extra shift.

It is expected that a 10% discount will be available from suppliers of raw materials in view of increased volume of business. Selling price will remain the same. The credit period allowed to customers will remain unaltered. Credit availed of from suppliers will continue to remain at the present level i.e., 2 months Lag in payment wages and expenses will continue to remain half a month.

You are required to **assess** the additional working capital requirements, if the policy to increase output is implemented.

Management of Receivables

Evaluating Different Grades of Customer and Credit Policies

Question 14 - Pyq , Study Material

The credit manager of XYZ Ltd. is reappraising the Company's policy. The company sells its products on terms of net 30. Cost of goods sold is 85% of sales and fixed costs are further 5% of sales.
XYZ classifies its customers on a scale of 1 to 4. During the past five years, the experience was as under:

Classification	Default as a percentage of sales	Average collection period in days for non-defaulting
1	0	45
2	2	42
3	10	40
4	20	80

The average rate of interest is 15%. **What** conclusions do you draw about the Company's Credit Policy? **What** other factors should be taken into account before changing the present policy? Discuss.

Credit Period Relaxation – Effect of Given After Tax Return Amount

Question 15 - Pyq

The Sales Manager of AB Limited suggests that if credit period is given for 1.5 months then sales may likely to increase by ₹. 1,20,000 per annum. Cost of sales amounted to 90% of sales. The risk of non-payment is 5%. Income tax rate is 30%. The expected return on investment is ₹. 3375 (after tax.) **Should** the company accept the suggestion of the Sales Manager?

Question 16 - Pyq

A new customer has approached a firm to establish a new business connection. The customer requires 1.5 months of credit. If the proposal is accepted, the sales of the firm will go up by ₹.2,40,000 per annum.
The new customer is being considered as a member of 10% risk of non-payment group.
The cost of sales amounts to 80% of sales. The tax rate is 30% and the desired rate of return is 40% (after tax).
Should the firm accept the offer? **Give** your opinion on the basis of calculations.

Question 17 - Study Material

A trader whose current sales are in the region of ₹ 6 lakhs 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:-

Credit Policy	Increase in Collection Period	Increase in Sales	Present Default anticipated
A	10 days	₹. 30,000	1.5%
B	20 days	₹. 48,000	2%
C	30 days	₹. 75,000	3%
D	45 days	₹. 90,000	4%

The selling price per unit is ₹ 3. Average cost per unit is ₹ 2.25 and variable costs per unit are ₹ 2. The current bad debt loss is 1%. Required return on additional investment is 20%. Assume a 360 days year.
ANALYSE which of the above policies would you recommend for adoption?

Unique way of calculating ACP

Question 18 - Pyq

Slow Payers are regular customers of Goods Dealers Ltd. and have approached the sellers for extension of credit facility for enabling them to purchase goods. On an analysis of past performance and on the basis of information supplied, the following pattern of payment schedule emerges in regard to Slow Payers:

Pattern of Payment Schedule	
At the end of 30 days	15% of the bill
At the end of 60 days	34% of the bill
At the end of 90 days	30% of the bill
At the end of 100 days	20% of the bill
Non-Recovery	1% of the bill

Slow Payers want to enter into a firm commitment for purchase of goods of ₹ 15 lakhs in 20X7, deliveries to be made in equal quantities on the first day of each quarter in the calendar year. The price per unit of commodity is ₹ 150 on which a profit of ₹ 5 per unit is expected to be made. It is anticipated by Goods Dealers Ltd., that taking up this contract would mean an extra recurring expenditure of ₹ 5,000 per annum. If the opportunity cost of funds in the hands of Goods Dealers is 24% per annum, **would** you as the finance manager of the seller recommend the grant of credit to Slow Payers? **ANALYSE**. Workings should form part of your answer. Assume a year of 365 days.

Question 19 - Study Material

Mosaic Limited has current sales of ₹. 1.5 lakh per year. Cost of sales is 75 percent of sales and bad debts are one percent of sales. Cost of sales comprises 80 per cent variable cost and 20 per cent fixed costs, while the company's required rate of return is 12 percent. Mosaic Limited currently allows customers 30 days' credit, but is considering increasing this to 60 days' credit in order to increase sales. It has been estimated that this change in policy will increase sales by 15 per cent, while bad debts will increase from one per cent to four per cent. It is not expected the policy change will result in an increase in fixed costs and creditors and stock will be unchanged.**Should** Mosaic Limited introduce the proposed policy?

Question 20 - Study Material

XYZ Corporation is considering relaxing its present credit policy and is in the process of evaluating two proposed policies. Currently, the firm has annual credit sales of ₹ 50 lakhs and accounts receivable of ₹ 12,50,000. The current level of loss due to bad debts is ₹. 1,50,000. The firm is required to give a return of 20% on the investment in new accounts receivables. The company's variable costs are 70% of the selling price. Given the following, **which** is the better option?

Particulars	Present Policy	Policy Option I	Policy Option II
Annual credit sales	50,00,000	60,00,000	67,50,000
Accounts receivable	12,50,000	20,00,000	28,12,500
Bad debt losses	1,50,000	3,00,000	4,50,000

Question 21 - Pyq

PTX Limited is considering a change in its present credit policy. Currently, it is evaluating two policies. The company is required to give a return of 20% on the investment in new accounts receivables. The company's variable costs are 70% of the selling price.

Information regarding present and proposed policies are as follows:

Particulars	Present policy	Policy option 1	Policy option 2
Annual credit sales (₹.)	30,00,000	42,00,000	45,00,000
Debtors turnover ratio	4 times	3 times	2.4 times
Loss due to bad debts	3% of sales	5% of sales	6% of sales

Note: Return on investments in new accounts receivable is based on cost of investment in debtors.
Which option would you recommend?

Credit Period Relaxation Decision – Effect of Tax Rate and Given After Tax Return

Question 22 - Pyq

A firm has a current sales of ₹2,56,48,750. The firm has unutilized capacity. In order to boost its sales, it is considering the relaxation in its credit policy. The proposed terms of credit will be 60 days credit against the present policy of 45 days. As a result, the bad debts will increase from 1.5% to 2% of sales. The firm's sales are expected to increase by 10%. The variable costs are 72% of the sales. The firm's corporate tax rate is 35%, and it requires an after tax return of 15% on its investment. **Should** the firm change its credit period?

Credit Relaxation Decision – Effect of Discount Offer – Weighted Average Collection Period

Question 23 -

New Ltd sells on credit terms "2/15 net 45". Its present Sales are ₹. 100 Lakhs per annum, Fixed Costs are ₹. 12 Lakhs per annum and Variable Costs are 70% of Sales. The Company's cost of funds is 24% and it is observed that 40% of the customers avail the discount, while the rest pay on the due date.

The Company is considering relaxing its credit terms to "3/18 net 45'. This relaxation is expected to increase Sales by 25% and Fixed Costs by ₹. 3 Lakhs per annum. Due to the economy of operations, Variable Costs will be reduced to 68% on all Sales. It is expected that 80% of the customers will avail the discount, the rest paying on the due date. **Advise** whether the relaxation in credit terms is worthwhile.

Treasury and Cash Management

Cash Budget

Question 24 - Study Material

Prepare monthly cash budget for six months beginning from April 2010 on the basis of the following information:

(i) Estimated monthly sales are as follows:

Particulars	Amount(₹)	Particulars	Amount(₹)
January	1,00,000	June	80,000
February	1,20,000	July	1,00,000
March	1,40,000	August	80,000
April	80,000	September	60,000
May	60,000	October	1,00,000

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

Particulars	Amount (₹)	Particulars	Amount (₹)
April	9,000	July	10,000
May	8,000	August	9,000
June	10,000	September	9,000

(iii) Of the sales, 80% is on credit and 20% for cash. 75% of the credit sales are collected within one month and the balance in two months. There are no bad debt losses.

(iv) Purchases amount to 80% of sales and are made and paid for in the month preceding the sales.

(v) The firm has 10% debentures of ₹ 1,20,000. Interest on these has to be paid quarterly in January, April and so on.

(vi) The firm is to make an advance payment of tax of ₹ 5,000 in July, 2010.

(vii) The firm had a cash balance of ₹ 20,000 on April 1, 2010, which is the minimum desired level of cash balance. Any cash surplus/deficit above or below this level is made up by temporary investments /liquidation of temporary investment or temporary borrowings at the end of each month (interest on these to be ignored).

Question 25 - Mtp

Prepare monthly cash budget for the first six months of 2021 on the basis of the following information:

(i) Actual and estimated monthly sales are as follows:

Actual	(₹.)	Estimated	(₹.)
October 2020	2,00,000	January 2021	60,000
November 2020	2,20,000	February 2021	80,000
December 2020	2,40,000	March 2021	1,00,000
		April 2021	1,20,000
		May 2021	80,000
		June 2021	60,000
		July 2021	1,20,000

(ii) Operating Expenses (including salary & wages) are estimated to be payable as follows:

Month	(₹.)	Month	(₹.)
January 2021	22,000	April 2021	30,000
February 2021	25,000	May 2021	25,000
March 2021	30,000	June 2021	24,000

(iii) Of the sales, 75% is on credit and 25% for cash. 60% of the credit sales are collected after one month, 30% after two months and 10% after three months.

(iv) Purchases amount to 80% of sales and are made on credit and paid for in the month preceding the sales.

(v) The firm has 12% debentures of ₹.1,00,000. Interest on these has to be paid quarterly in January, April and so on.

(vi) The firm is to make an advance payment of tax of ₹. 5,000 in April.

(vii) The firm had a cash balance of ₹. 40,000 at 31st Dec. 2020, which is the minimum desired level of cash balance. Any cash surplus/deficit above/below this level is made up by temporary investments/liquidation of temporary investments or temporary borrowings at the end of each month (interest on these to be ignored).

Question 26 - Study Material

The selling price of a book is ₹ 15, and sales are made on credit through a book club and invoiced on the last day of the month. Variable costs of production per book are materials (₹ 5), labour (₹ 4), and overhead (₹ 2).

The sales manager has forecasted the following volumes:

	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug
No. of Books	1,000	1,000	1,000	1,250	1,500	2,000	1,900	2,200	2,200	2,300

Customers are expected to pay as follows:

One month after the sale	40%
Two months after the sale	60%

The company produces the books two months before they are sold and the creditors for materials are paid two months after production.

Variable overheads are paid in the month following production and are expected to increase by 25% in April; 75% of wages are paid in the month of production and 25% in the following month. A wage increase of 12.5% will take place on 1st March.

The company is going through a restructuring and will sell one of its freehold properties in May for ₹ 25,000, but it is also planning to buy a new printing press in May for ₹ 10,000. Depreciation is currently ₹ 1,000 per month, and will rise to ₹ 1500 after the purchase of the new machine.

The company's corporation tax (of ₹ 10,000) is due for payment in March.

The company presently has a cash balance at bank on 31 December 2010, of ₹ 1500.

You are required to **prepare** a cash budget for the six months from January to June.

Question 27 - Study Material

From the information and the assumption that the cash balance in hand on 1st January 2010 is ₹ 72,500, **prepare** a cash budget. Assume that 50 per cent of total sales are cash sales. Assets are to be acquired in the months of February and April. Therefore, provisions should be made for the payment of ₹ 8,000 and ₹ 25,000 for the same. An application has been made to the bank for the grant of a loan of ₹ 30,000 and it is hoped that loan amount will be received in the month of May.

It is anticipated that a dividend of ₹ 35,000 will be paid in June. Debtors are allowed one month's credit. Creditors for materials purchased and overheads grant one month's credit. Sales commission at 3 percent on sales is paid to the salesman each month.

Months	Sales (₹)	Material Purchases (₹)	Salaries & Wages (₹)	Production Overheads (₹)	Office & Selling Overheads (₹)
January	72,000	25,000	10,000	6,000	5,500
February	97,000	31,000	12,100	6,300	6,700
March	86,000	25,500	10,600	6,000	7,500
April	88,600	30,600	25,000	6,500	8,900
May	1,02,500	37,000	22,000	8,000	11,000
June	1,08,700	38,800	23,000	8,200	11,500

Cash Budget for Manufacturing Concern

Question 28 - Pyq

The following details are forecasted by a Company for the purpose of effective utilization and management of Cash:

- **Estimated Sales and Manufacturing Costs:**

Year 2010 Month	Sales (₹)	Materials (₹)	Wages (₹)	Overheads (₹)
April	4,20,000	2,00,000	1,60,000	45,000
May	4,50,000	2,10,000	1,60,000	40,000
June	5,00,000	2,60,000	1,65,000	38,000
July	4,90,000	2,82,000	1,65,000	37,500
August	5,40,000	2,80,000	1,65,000	60,800
September	6,10,000	3,10,000	1,70,000	52,000

- **Credit-Terms: (a)** 20% Sales are on Cash. 50% of the Credit Sales are collected next month and the balance in the following month.
  (b) Credit allowed by Suppliers is 2 months.
  (c) Delay in payment of Wages is ½ (one-half) month and of Overheads is 1 (one) month.
- Interest on 12% Debentures of ₹ 5,00,000 is to be paid half-yearly in June and December.
- Dividends on Investments amounting to ₹ 25,000 are expected to be received in June.

- A New Machinery will be installed in June at a cost of ₹ 4,00,000 payable in 20 monthly instalments from July onwards.
- Advance Income-Tax to be paid in August is ₹ 15,000.
- Cash balance on 1st June is expected to be ₹ 45,000 and the Company wants to keep it at the end of every month around this figure, the excess cash (in multiple of thousands rupees) being put in Fixed Deposit.

You are required to **prepare** a monthly Cash Budget on the basis of above information for four months beginning from June.

Solution 28:

Cash Budget for the months of June, July, August and September

Particulars	June (₹)	July (₹)	August (₹)	September (₹)
Opening Balance	45,000	45,500	45,500	45,000
Add: Receipts				
Cash Sales (20% of respective month's Sales)	1,00,000	98,000	1,08,000	1,22,000
Collection from Debtors	3,48,000	3,80,000	3,96,000	4,12,000
Interest on Investments	25,000	-	-	-
Total Receipts (A)	**5,18,000**	**5,23,500**	**5,49,500**	**5,79,000**
Payments:				
Creditors (2 months) April paid in June, and so on.	2,00,000	2,10,000	2,60,000	2,82,000
Wages (½ of previous month + ½ of Current month)	1,62,500	1,65,000	1,65,000	1,67,500
Overheads (1 month), previous month expenses paid now	40,000	38,000	37,500	60,800
Interest on Debentures (6% on ₹ 5,00,000)	30,000	-	-	-
Instalment on Machinery (₹ 4,00,000 ÷ 20 months)	-	20,000	20,000	20,000
Advance Tax	-	-	15,000	-
Total Payments (B)	**4,32,500**	**4,33,000**	**4,97,500**	**5,30,300**
Closing Balance before investment in FD (A) – (B)	85,500	90,500	52,000	48,700
Investment in Fixed Deposit (multiples of 1,000) (Balancing Figure)	40,000	45,000	7,000	3,000
Closing Balance (required around ₹ 45,000)	45,500	45,500	45,000	45,700

Working Notes: **Computation of Collection from Debtors**

Particulars	April (₹)	May (₹)	June (₹)	July (₹)	August (₹)	September (₹)
Total Sales	4,20,000	4,50,000	5,00,000	4,90,000	5,40,000	6,10,000
Cash Sales	84,000	90,000	1,00,000	98,000	1,08,000	1,22,000
Credit Sales	3,36,000	3,60,000	4,00,000	3,92,000	4,32,000	4,88,000
Receipt:						
50%		1,68,000	1,80,000	2,00,000	1,96,000	2,16,000
50%			1,68,000	1,80,000	2,00,000	1,96,000
Total Receipts			**3,48,000**	**3,80,000**	**3,96,000**	**4,12,000**

Question 29 - Rtp

Current Limited is into retail business. The following information is given for your consideration:

- Purchases are 75% of Sales and Purchases are sold at Cost plus 33 1/3rd %.
- Budgeted Sales, Labour Cost and expenses incurred are:

	Budgeted Sales (₹)	Labour Cost (₹)	Expenses incurred (₹)
January	40,000	3,000	4,000
February	60,000	3,000	6,000
March	1,60,000	5,000	7,000
April	1,20,000	4,000	7,000

- 75% Sales are for Cash. 25% of Sales are one month's interest-free credit.
- The policy of the Management is to have sufficient stock in hand at the end of each month to meet sales demand in the next half month.
- Creditors for Materials and Expenses are paid in the month after the Purchases are made or the expenses incurred. Labour is paid in full by the end of each month.
- Expenses include a monthly depreciation charge of ₹ 2,000.
- The Company will buy Equipment costing ₹ 18,000 cash in February and will pay a Dividend of ₹ 20,000 in the month of March. The opening Cash Balance in February is ₹ 1,000.

Prepare for the months of February and March: (a) Profit and Loss Account, and (b) Cash Budget.

Inventory Management

Evaluation of Alternative Working Capital Policies

Question 30 - Study Material, Pyq

A company is considering its working capital investment and financial policies for the next year. Estimated fixed assets and current liabilities for the next year are ₹ 2.60 crores and ₹ 2.34 crores respectively. Estimated Sales and EBIT depend on current assets investment, particularly inventories and book-debts.

The financial controller of the company is examining the following alternative Working CapitalPolicies:

(₹ In Crores)

Working Capital Policy	Investment in Current Assets	Estimated Sales	EBIT
Conservative	4.50	12.30	1.23
Moderate	3.90	11.50	1.15
Aggressive	2.60	10.00	1.00

After evaluating the working capital policy, the Financial Controller has advised the adoption of the moderate working capital policy. The company is now examining the use of long-term and short-term borrowings for financing its assets. The company will use ₹ 2.50 crores of the equity funds. The corporate tax rate is 35%.

The company is considering the following debt alternatives:

Financing Policy	Short-term Debt	Long-term Debt
Conservative	0.54	1.12
Moderate	1.00	0.66
Aggressive	1.50	0.16
Interest Rate – Average	12%	16%

You are required to **calculate** the following:

(1) Working Capital Investment for each policy: **(a)** Net Working Capital position;
(b) Rate of Return;
(c) Current ratio.

(2) Financing for each policy; **(a)** Net Working Capital;
(b) Rate of Return of Shareholders equity;
(c) Current ratio.

Question 31 - Study Material

A firm has the following data for the year ending 31st March, 2017:

Particulars	(₹)
Sales (1,00,000 @ ₹ 20)	20,00,000
Earnings before Interest and Taxes	2,00,000
Fixed Assets	5,00,000

The three possible current assets holdings of the firm are ₹ 5,00,000, ₹ 4,00,000 and ₹ 3,00,000. It is assumed that fixed assets level is constant and profits do not vary with current assets levels.

ANALYSE the effect of the three alternative current assets policies.

Management of Payables

Practical Problems

Question 32 - Study Material

Suppose ABC Ltd. has been offered credit terms from its major supplier of 2/10, net 45. Hence the company has the choice of paying ₹ 98 per ₹ 100 or to invest the ₹ 98 for an additional 35 days and eventually pay the supplier ₹ 100 per ₹ 100. The decision as to whether the discount should be accepted depends on the opportunity cost of investing ₹ 98 for 35 days. **What** should the company do?

Question 33 -

XYZ Limited normally pays its Suppliers in the third month after invoicing. It is now offered a 2% discount for payment within one month on invoicing. Payments are at ₹ 3,00,000 per month, and the Company operates on Bank Overdraft on which interest is charged at 14.5%. **Advise** whether the offer should be accepted.

Would your answer differ if the Company were given 3% discount, all other conditions remaining the same as above?

Financing of Working Capital

Effective Cost of Factoring

Question 34 - Pyq

A Ltd has a total sales of ₹ 3.2 Crores and its Average Collection Period is 90 days. The past experience indicates that Bad Debt losses are 1.5% on Sales. The expenditure incurred by the Firm in administering its receivable collection efforts are ₹ 5,00,000. A Factor is prepared to buy the Firm's receivables by charging 2% Commission. The Factor will pay advance on receivables to the Firm at an Interest Rate of 18% p.a. after withholding 10% as Reserve. **Calculate** the Effective Cost of Factoring to the Firm.

Factoring Vs Own Collection System

Question 35 - Rtp

Jaidev Ltd has total credit sales of ₹ 40 lakhs p.a. and its average collection period is 90 days. The past experience indicates that the Bad Debt losses are around 3% of credit sales. Jaidev spends about ₹ 1,00,000 per annum on administrating its credit sales. It is considering availing the services of a Factoring Firm. It has received an offer from Uday Ltd, which agrees to buy the receivables of Company. Uday will charge Commission of 3% and also agrees to pay advance against receivables at an Interest Rate of 18% p.a. after withholding 10% as Reserve. **Should** Jaidev accept Uday's offer if the former's ROI is 15%? (360 days in a year.)

Own Financing Vs Non-Recourse Factoring

Question 36 - Pyq

A firm has a total sales of ₹ 200 lakhs of which 80% is on credit. It is offering credit terms of 2/40, net 120. Of the total, 50% of customers avail of discount & the balance pay in 120 days. Past experience indicates that bad debt losses are around 1% of credit sales. The firm spends about ₹2,40,000 per annum to administer its credit sales. These are avoidable as a factor is prepared to buy the firm's receivables. He will charge 2% commission. He will pay advance against receivables to the firm at an interest rate of 18% after withholding 10% as reserve.

(i) **What** is the effective cost of factoring? Consider the year as 360 days.

(ii) If bank finance for working capital is available at 14% interest, **should** the firm avail of factoring service?

Question 37 - Pyq

Following is the sales information in respect of Bright Ltd:

Annual Sales (90% on credit)	: ₹7,50,00,000
Credit period	: 45 days
Average Collection period	: 70 days
Bad debts	: 0.75%
Credit administration cost (Out of which 2/5th is avoidable)	: ₹18,60,000

A factor firm has offered to manage the company's debtors on a non-recourse basis at a service charge of 2%. Factor agrees to grant advance against debtors at an interest rate of 14% after withholding 20% as reserve. Payment period guaranteed by factor is 45 days. The cost of capital of the company is 12.5%. One time redundancy payment of ₹50,000 is required to be made to factor.

Calculate the effective cost of factoring to the company. (Assume 360 days in a year)

Question 38 - Mtp

Sundaram limited, a plastic manufacturing company, had invested enormous amounts of money in a new expansion project. Due to such a great amount of capital investment, the Company needs an additional ₹ 2,00,00,000 in working capital immediately.

The CFO has determined the following three feasible sources of working capital funds:

Bank Loan: The company's bank will lend ₹2,30,00,000 at 12% per annum. However, the bank will require 15% of the loan granted to be kept in a current account as the minimum average balance which otherwise would have been just ₹ 50,000. **Trade Credit:** A major supplier with 2/20 net 80 credit terms has approached for supply of raw material worth ₹1,90,00,000 p.m.

Factoring: factoring firm will buy the companies receivables of ₹ 2,50,00,000 per month, which have a collection period of 60 days. factor will advance up to 75% of the face value of the receivables at 14 percent per annum. Factor Commission will amount to 2% on all receivables purchased. Factoring will save credit department expense and bad debts of ₹ 1,75,000 p.m. and ₹ 2,25,000 p.m. Based on annual percentage cost, **ADVISE** which alternative should the company select. Assume 360 days a year.

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