FINANCIAL MANAGEMENT AND BUSINESS DATA ANALYTICS

Time Allowed: 3 Hours **Full Marks: 100**

The figures in the margin on the right side indicate full marks.

SECTION – A (Compulsory)

1. Choose the correct option: **[15 x 2 = 30]**

(ii) Risk of two securities having different expected returns can be compared using:
a. Standard deviation
b. Variance
c. Coefficient of Variation
d. None of the above

(iii) Find the present value of ₹ 1,000 receivable 6 years hence if the rate of discount is 10%.
a. ₹564.5
b. ₹554.5
c. ₹574.5
d. ₹600

(iv) Calculate the future value of ₹1,000 invested in State Bank Cash Certificate scheme for 2 years @ 5.5% p.a., compounded semi-annually.
a. ₹1,114.62
b. ₹1,104.62
c. ₹1,401.51
d. ₹1,141.51

(v) A company is planning to issue a discount bond with a par value of ₹1,000, implicit interest rate of 11.5% and a redemption period of 5 years. The company also intends to offer an early bird incentive of 1.5%. The issue price (rounded up to nearest rupee) will be [Given: PVIF (11.5%, 5 years) = 0.5803]
a. ₹ 580
b. ₹ 572
c. ₹ 543
d. ₹ 490

(vi) The type of collateral (security) used for short-term loan is:
a. Real estate
b. Plant & Machinery
c. Stock of good
d. Equity share capital

(vii) A ratio_____of is considered satisfactory by the financial institutions the greater debt service coverage ratio indicates the better debt servicing capacity of the organization.

a. 1
b. 2
c. 3
d. 4

(viii) Cash Flow Statement is _____for Income Statement or Funds Flow Statement.

a. not a substitute
b. substitute
c. depends on situation
d. None of the above

(ix) If the CAPM is used to estimate the cost of equity capital, the expected excess market return is equal to the:

a. Return on the stock minus the risk-free rate.
b. Difference between the return on the market and the risk-free rate.
c. Beta times the market risk premium.
d. Beta times the risk-free rate

(x) A company has expected Net Operating Income – ₹ 4,80,000; 10% Debt – ₹14,40,000 and Equity Capitalisation rate - 20% what is the weighted average cost of capital for the company?

a. 0.15385
b. 0.13585
c. 0.18351
d. 0.15531

(xi) The discounted cash flows techniques are:

a. Net Present Value (NPV)
b. Internal Rate of Return (IRR)
c. Profitability Index (PI)
d. All of the above.

(xii) Payback period in which an expected cash flows are discounted with help of project cost of capital is classified as _____.

a. discounted payback period
b. discounted rate of return
c. discounted cash flows
d. discounted project cost

(xiii) X Ltd. distributes its products to more than 500 retailers. The company's collection period is 30 days and keeps its inventory for 20 days. The operating cycle would be:

a. 40 Days
b. 43 Days
c. 45 Days
d. 50 Days

(xiv) Conversation of marketable securities into cash entails a fixed cost of ₹ 1,000 per transaction. What will be the optimal conversation size as per Baumol model of cash management?

a. ₹ 315,628
b. ₹ 316,228
c. ₹ 317,678
d. ₹ 318,426

(xv) The geometric distribution is a discrete distribution that assesses _____.

a. the probability of the occurrence of the first success
b. the probability of the occurrence of the second success
c. the probability of the occurrence of the third success
d. the probability of the occurrence of the less success

(xvi) _____is a set of skills that aims to identify, find, modify, format, and present data in a manner that ideally conveys meaning and provides insight.

a. Data Presentation Architecture
b. Data Presentation Hierarchy
c. Data Visualization Architecture
d. None of the above

Answer:

i.	ii.	iii.	iv.	v.	vi.	vii.	viii.	ix.	x.	xi.	xii.	xiii.	xiv.	xv.
c	a	a	b	c	b	a	b	a	d	a	d	b	a	a

Section – B

(Answer any five questions out of seven questions given. Each question carries 14 Marks)

[5 x 14 = 70]

2. (a) Describe the various functions RBI. [7]

(b) Describe the implementation of data mining techniques in the fields of finance and management. [7]

Answer:

(a)

The Reserve Bank is the umbrella network for numerous activities, all related to the nation's financial sector, encompassing and extending beyond the functions of a typical central bank. Main activities or functions of Reserve Bank are:

(i) Monetary Authority:The Reserve Bank of India controls the credit and formulates monetary policy. Monetary policy refers to the use of instruments under the control of the central bank to regulate the availability, cost and use of money and credit.

(ii) Issuer of Currency: The Reserve Bank is the nation's sole note issuing authority. Along with the Government of India, RBI is responsible for the design and production and overall management of the nation's currency, with the goal of ensuring an adequate supply of clean and genuine notes. The Department of Currency Management at Central Office, Mumbai, in cooperation with the Issue Departments of the Reserve Bank's Regional Offices across India oversees currency management. The function includes supplying and distributing adequate quantity of currency throughout the country and ensuring the quality of banknotes in circulation by continuous supply of clean notes and timely withdrawal of soiled notes. Indirect Instrument.

(iii) Banker and Debt Manager to Government : The role as banker and debt manager to government includes several distinct functions:

- Undertaking banking transactions for the central and state governments to facilitate receipts and payments and maintaining their accounts.
- Managing the governments' domestic debt with the objective of raising the required amount of public debt in a cost-effective and timely manner.
- Developing the market for government securities to enable the government to raise debt at a reasonable cost, provide benchmarks for raising resources by other entities and facilitate transmission of monetary policy actions.

(iv) Banker to Banks: As Banker to banks, the Reserve Bank provides short-term loans and advances to select banks, when necessary,to facilitate lending to specific sectors and for specific purposes.

As the banker to banks, RBI focus on:

- Enabling smooth, swift and seamless clearing and settlement of inter-bank obligations.
- Providing an efficient means of funds transfer for banks.
- Enabling banks to maintain their accounts with us for purpose of statutory reserve requirements and maintain transaction balances.
- Acting as lender of the last resort.

The Reserve Bank provides products and services for the nation's banks similar to what banks offer their own customers.

(v) Maintaining Financial Stability: Pursuit of financial stability has emerged as a key critical policy objective for the central banks in the wake of the recent global financial crisis. Central banks have a critical role to play in achieving this objective. Though financial stability is not an explicit objective of the Reserve Bank

in terms of the Reserve Bank of India Act, 1935, it has been an explicit objective of the Reserve Bank since the early 2000s.

(b)

The widespread use of data mining techniques by business intelligence and data analytics teams enables them to harvest insights for their organisations and industries.

Utilizing data mining techniques, hidden patterns and future trends and behaviours in financial markets may be predicted. Typically, sophisticated statistical, mathematical, and artificial intelligence approaches are necessary for data mining, particularly for high-frequency financial data. Among the data mining applications are:

- Detecting money laundering and other financial crimes:

  Money laundering is the illegal conversion of black money to white money. In today's society, data mining techniques have advanced to the point where they are deemed suitable for detecting money laundering. The data mining methodology provides a mechanism for bank customers to detect or verify the detection of the anti-money laundering impact.

- Prediction of loan repayment and customer credit policy analysis:

  Loan Distribution is the core business function of every bank. The loan Prediction system automatically computes the size of the characteristics it employs and examines data pertaining to its size. Consequently, data mining aids in the management of all critical data and massive databases by utilising its models.

- Target marketing:

  Together, data mining and marketing work to target a certain market, and they also assist and determine market decisions. With data mining, it is possible to keep earnings, margins, etc. and determine which product is optimal for various types of customers.

- Design and construction of data warehouses:

  The business is able to retrieve or move the data into several huge data warehouses, allowing a vast volume of data to be correctly and reliably evaluated with the aid of various data mining methodologies and techniques. It also examines a vast number of transactions.

3. (a) The following are the ratios relating to the activities of X Ltd.

Debtors' velocity (months)	**3**
Stock velocity (months)	**8**
Creditors' velocity (months)	**2**
Gross profit ratio (%)	**25**

Gross profit for the current year ended December, 31st, 2024 amounts to ₹ 4,00,000.
Closing stock of the year is ₹ 10,000 above the opening stock. Bills receivables amount to ₹ 25,000 and bills payable to ₹ 10,000.
Calculate :

(i) Sales,
(ii) Closing Stock, and
(iii) Sundry Creditors. **[7]**

(b) The Balance Sheets of a company as on 31st March, 2024 and 2025 are given below: (₹)

Liabilities	31.03.24	31.03.25	Assets	31.03.24	31.03.25
Equity Share Capital	14,40,000	19,20,000	Fixed Assets	38,40,000	45,60,000
Capital Reserve	--	48,000	Less: Depreciation	(11,04,000)	(13,92,000)
General Reserve	8,16,000	9,60,000		27,36,000	31,68,000
Profit & Loss A/c	2,88,000	3,60,000	Investment	4,80,000	3,84,000
9% Debentures	9,60,000	6,72,000	Sundry Debtors	12,00,000	14,00,000
Sundry Creditors	5,50,000	5,90,000	Stock	1,40,000	1,84,000
Bills Payable	26,000	34,000	Cash in hand	4,000	--
Proposed Dividend	1,44,000	1,72,800	Preliminary Expenses	96,000	48,000
Provision for tax	4,32,000	4,08,000			
Unpaid dividend	--	19,200			
	46,56,000	51,84,000		46,56,000	51,84,000

Additional Information:

During the year ended 31st March, 2025 the company:

(i) Sold a machine for ₹1,20,000; the cost of machine was ₹2,40,000 and depreciation provided on it was₹84,000.

(ii) Provided ₹4,20,000 as depreciation on fixed assets.

(iii) Sold some investment and profit credited to capital reserve.

(iv) Redeemed 30% of the debenture @ 105.

(v) Decided to write off fixed assets costing ₹60,000 on which depreciation amounting to ₹48,000 has been provided.

You are required to prepare Cash Flow Statement as per Ind AS-7. [7]

Answer:

(a)

i. Determination of sales:

Sales = $\frac{₹\ 4,00,000}{25} \times 100$ = ₹ 16,00,000

ii. Determination of sundry debtors:

Debtors' velocity is 3 months. In other words, debtors collection period is 3 months, or debtors' turnover ratio is 4. Assuming all sales to be credit sales and debtors' turnover ratio being calculated on the basis of year-end figures.

Debtors' turnover ratio = $\frac{\text{Credit Sales}}{\text{Closing Debtors' + Bills Receivables}}$

Closing debtors' + Bills Receivables = $\frac{\text{Credit sales}}{\text{Debtors Turnover ratio}} = \frac{₹\ 16,00,000}{4} = ₹\ 4,00,000$

Closing Debtors = ₹ 4,00,000 – ₹ 25,000 = ₹ 3,75,000

iii. Determination of Closing Stock:

Stock velocity of 8 months signifies that the inventory holding period is 8 months, stock turnover ratio is 1.5 i.e., (12 months / 8).

Stock Turnover = = $\frac{\textbf{Cost of Goods Sold(Sales−Gross Profit)}}{\textbf{Average Stock}} = \frac{\textbf{12,00,000}}{\textbf{Average Stock}} = \mathbf{1.5}$

Average Stock = $\frac{12,00,000}{1.5} = ₹\ \mathbf{8,00,000}$

Closing Stock – Opening Stock = ₹ 10,000.....(i)

$\frac{\textit{Closing Stock+Opening Stock}}{2}$ = ₹ 8,00,000.....(ii)

Closing Stock + Opening Stock = ₹ 16,00,000 .....(iii)

Subtracting (i) from (iii) we have,

2 Opening Stock = ₹ 15,90,000

Opening Stock = ₹ 7,95,000

Therefore, Closing Stock = ₹8,05,000

iv. Determination of Sundry Creditors':

Creditors' velocity of 2 months signifies that the credit payment period is 2 months. In other words, creditors' turnover ratio is 6 (i.e., 12 months/2). Assuming all purchases to be credit purchases and creditors turnover is based on year- end figures.

Creditors Turnover Ratio = $\frac{\textbf{Credit Purchase}}{\textbf{Creditors+Bills payable}}$

or, Creditors + ₹10,000 = $\frac{₹\ 12,00,000}{6}$

or, Creditors = ₹ 2,01,667 – ₹ 10,000

Therefore, Creditors = ₹1,91,667

Credit purchases are calculated as follows:

Cost of Goods Sold = Opening Stock + Purchases + Closing Stock

or, ₹ 12,00,000 = ₹ 7,95, 000 + Purchases – ₹ 8,05,000

or, ₹ 12,00,000 + ₹ 10,000 = Purchases

or, ₹ 12,10,000 = Purchases (credit)

(b)

Cash Flow Statement for the year ending 31st March, 2025

	Particulars	(₹)	(₹)
A	**Cash Flows from Operating Activities**		
	Profit and Loss A/c		72,000
	(₹ 3,60,000 – ₹ 2,88,000)		
	Adjustments:		
	Increase in General Reserve	1,44,000	
	Depreciation	4,20,000	
	Provision for Tax	4,08,000	
	Loss on Sale of Machine	36,000	
	Premium on Redemption of Debentures	14,400	
	Proposed Dividend	1,72,800	
	Preliminary Expenses written off	48,000	
	Fixed Assets written of	12,000	
	Interest on Debentures	60,480	13,15,680
	Funds from Operations		13,87,680
	Increase in Sundry Creditors	40,000	
	Increase in Bills Payable	8,000	
		48,000	
	Increase in Sundry Debtors	(2,00,000)	
	Increase in Stock	(44,000)	(1,96,000)
	Cash generated from operation		11,91,680
	Less: Income Tax paid		4,32,000
	Net Cash in flows from Operating Activities		7,59,680
B	**Cash flows from Investing Activities**		
	Purchase of Fixed Assets	(10,20,000)	
	Sale of Investment	1,44,000	

	Sale of Fixed Assets	1,20,000	
	Net Cash out flows from Investing Activities		(7,56,000)
C	**Cash flow from Financing Activities**		
	Issue of share capital Redemption of Debentures Dividend Paid (1,44,000 – 19,200) Interest on Debentures	4,80,000 (3,02,400) (1,24,800) (60,480)	
	Net Cash outflow from Financing Activities		(7,680)
	Net Increase in Cash and Cash Equivalents during the year (A+B+C) Cash and Cash Equivalents at the beginning of the year Cash and Cash Equivalents at the end of the year		(4,000) 4,000 Nil

- It is presumed that the 30% debentures have been redeemed at the beginning of the year.

Working Note:

Dr. **Fixed Assets Account** **Cr.**

Particulars	Amount (₹)	Particulars	Amount (₹)
To, Balance b/d	27,36,000	By, Cash	1,20,000
To, Purchases (balance figure)	10,20,000	By, Loss on sales	36,000
		By, Depreciation	4,20,000
		By, Assets written off	12,000
		By, Balance c/d	31,68,000
	37,56,000		**37,56,000**

4. (a)

From the following balance sheet prepare a common size statement and comment

Particulars	Amount (₹) 31.03.2024	Amount (₹) 31.03.2025
Shareholders' Fund		
Equity Share Capital (₹10 each)	**7,20,000**	**7,20,000**
Reserve & Surplus	**2,88,000**	**5,46,000**
Non-current Liabilities		
Long-term debt	**5,46,000**	**5,08,000**
Current Liabilities		
Current Liabilities & Provisions	**2,40,000**	**1,75,500**
Total	**18,00,000**	**19,50,000**

Non-current Assets		
Fixed Assets	**12,06,000**	**11,70,000**
Current Assets		
Inventory	**2,52,000**	**3,51,000**
Debtors	**1,80,000**	**1,95,000**
Bank	**1,62,000**	**2,34,000**
Total	**18,00,000**	**19,50,000**

[7]

(b) From the following information in respect of a company, you are required to calculate the cost of equity using CAPM approach:

(i) Risk-free rate of return 12%

(ii) Expected market price of equity shares at the year-end is ₹1,400

(iii) Initial price of investment in equity shares of the company is ₹1,200

(iv) Beta risk factor of the company is 0.70

(v) Expected dividend at the year-end is ₹140 **[7]**

Answer:

(a)

Common Size Balance Sheet as on 31.03.2024 & 31.03.2025

Particulars	On 31.03.2024 % of total	On 31.03.2025 % of total
Shareholders' Fund		
Equity Share Capital $\frac{Share\ Capital}{Total\ Liabilities} \times 100$	40%	36.92%
Reserve & Surplus $\frac{Reserves\ \&\ Surplus}{Total\ Liabilities} \times 100$	16%	28%
Total Shareholders Fund/Owners' Equity	56%	64.92%
Non-current Liabilities		
Long-Term Debt $\frac{Long-term\ debt}{Total\ Liabilities} \times 100$	30.33%	26.05%

Current Liabilities		
Current Liabilities & Provision $\frac{Current\ Liabilities}{Total\ Liabilities} \times 100$	13.33%	9%
	100%	100%
Non-current Assets		
Fixed Assets $\frac{Fixed\ Assets}{Total\ Assets} \times 100$	67%	60%
Current Assets		
Inventory $\frac{Inventory}{Total\ Assets} \times 100$	14%	18%
Debtors $\frac{Debtors}{Total\ Assets} \times 100$	10%	10%
Bank $\frac{Bank}{Total\ Assets} \times 100$	9%	12%
Total Current Assets	33%	40%
Total Assets	100%	100%

Comments:

(i) The proportion of owner's equity to total liabilities of the company has been increased from 56% to 64.92% whereas the proportion of long-term debt to total liabilities has been decreased from 30.33% to 26.05% in the year 2024-25. So, we can conclude that the dependency on outsiders has been decreased and degree of financial risk associated with the company has been reduced during the study period.

(ii) The percentage of current assets to total assets has been increased from 33% to 40% whereas the percentage of current liabilities to total liabilities decreased from 13.33% to 9% in the year 2024-25. Therefore, it indicates that the liquidity position of the company has been significantly improved during the period under study.
But reduction of fixed assets may hamper the long-term stability and operating efficiency of the company.

(b)

We know under CAPM approach cost of equity can be

calculated as; $k_e = R_f + \beta (R_m - R_f)$

Where,

R_f = Risk free rate of return i.e. 12% or 0.12

B = Beta coefficient i.e. 0.70

R_m = Expected return on market portfolio, i.e.

$$\frac{\text{Expected dividend + Capital appreciation}}{\text{Initial Investment}} \times 100$$

$$\frac{140 + 200 \text{ (i.e. 1400-1200)}}{1200} \times 100$$

k_e = 0.2833 or 28.33%

= 0.12+ 0.70 (0.2833 – 0.12)

= 0.23431 or 23.43%

5. (a) A machine costing ₹12,00,000 is required to undertake a proposed project. The effective life of the machine is expected to be 5 years with residual value of ₹2,00,000. The company follows SLM of charging depreciation. The estimated EBT of the project are as follows:

Year	1	2	3	4	5
EBIT (₹)	4,80,000	5,60,000	6,40,000	4,00,000	3,20,000

If tax rate is 40% and cost of capital is 15%, calculate the NPV and suggest whether the machine should be acquired or not.

Given the PV of Re.1 at 15% discount rate:

Year	1	2	3	4	5
PVIF	0.8696	0.7561	0.6575	0.5718	0.4972

[7]

(b) A project requires an initial investment of ₹3,00,000. It yields cash inflow of ₹60,000, ₹50,000, ₹70,000, ₹75,000, ₹90,000, ₹60,000 for next 6 years. You are required to evaluate the pay-back period of the project.

[7]

Answer:

(a)

Calculation of NPV

Year	EBIT	Tax @40%	EAT	Depreciation	CFAT	PVIF	PVCF
1	4,80,000	1,92,000	2,88,000	2,00,000	4,88,000	0.8696	4,24364.8

2	5,60,000	2,24,000	3,36,000	2,00,000	536,000	0.7561	4,05269.6
3	6,40,000	2,56,000	3,84,000	2,00,000	584,000	0.6575	3,83,980
4	4,00,000	1,60,000	2,40,000	2,00,000	4,40,000	0.5718	2,51592
5	3,20,000	1,28,000	1,92,000	2,00,000	5,92,000	0.4972	2,94342.4
Total PV							17,59,549
(-) Initial Investment							12,00,000
NPV							5,59549

Note: Depreciation = (12,00,000 – 2,00,000)/5 = ₹2,00,000

Note: 5th year CFAT includes the scrap value of ₹2,00,000.

Since NPV is positive, it is acceptable.

(b)

Year	Cash inflow(₹)	Cumulative Cash Inflow (₹)
1	60,000	60,000
2	50,000	1,10,000
3	70,000	1,80,000
4	75,000	2,55,000
5	90,000	3,45,000
6	60,000	4,05,000

- Initial investment = ₹3,00,000
- Cumulative inflow at the end of Year 4 = ₹2,55,000
- Shortfall at end of Year 4 = 3,00,000 – 2,55,000 = ₹45,000
- Cash inflow in Year 5 = ₹90,000

Fraction of Year 5 required = $\frac{45,000}{90,000}$ = 0.5 year

Payback Period= 4+0.5 = 4.5 Years.

6. (a) Prepare a working capital forecast from the following information:
Production during the previous year was 20,00,000 units. The same level of activity is intended to be maintained during the current year. The expected ratios of cost to selling price are:

Raw materials	**40%**
Direct Wages	**20%**
Overheads	**20%**

The raw materials ordinarily remain in stores for 3 months before production. Every unit of production remains in the process for 2 months and is assumed to be consisting of 100% raw material, wages and overheads. Finished goods remain in the warehouse for 3 months. Credit allowed by creditors is 4 months from the date of the delivery of raw material and credit given to debtors is 3 months from the date of dispatch.
The estimated balance of cash to be held ₹4,00,000
Lag in payment of wages ½ month

Lag in payment of expenses ½month

Selling price is ₹8 per unit. You are required to make a provision of 10% for contingency (except cash). Relevant assumptions may be made. [7]

(b) A Ltd. has received an offer of quantity discounts on its order of materials as under:

Ordering quantities (Kgs)	Price per kg. (₹)
Less than 500	24.00
500 but less than 1600	23.60
1,600 but less than 4000	23.20
4,000 but less than 8,000	22.80
8,000 and above	22.40

The annual requirement for the material is 8,000 kgs. The ordering cost per order is ₹ 13.00 and the stock holding cost is estimated at 20% of material cost per annum. As a Cost and Management Accountant you have to compute the most economical ordering quantity. [7]

Answer:

(a) Total Sales = 20,00,000 × 8 = ₹1,60,00,000

Statement of Working Capital Requirement

Particulars	₹	₹
A. Current Asset:		
Debtors (1,60,00,000 × 80% × 3/12)	32,00,000	

Finished Goods (1,60,00,000 × 80% × 3/12)	32,00,000	
Work-in-progress (1,60,00,000 × 80% × 2/12)	21,33,333	
Raw Materials (1,60,00,000 × 40% × 3/12)	16,00,000	
Total current assets		1,01,33,333
B. Current Liabilities:		
Creditors (1,60,00,000 × 40% × 4/12)	21,33,333	
Wages (1,60,00,000 × 20% × 1/24)	1,33,333	
Overheads (1,60,00,000 × 20% × 1/24)	1,33,334	24,00,000
Excess of CA over CL		77,33,333
+ 10% contingency		7,73,333
		85,06,666
Cash		4,00,000
Working Capital Requirement		89,06,666

(b) Computation of most Economical ordering quantity

Ordering quantity Size (kg)	400	500	1600	4000	8000
Number of Orders (Annual Req./ Order Size)	20	16	5	2	1
Average inventory (Kg)	200	250	800	2000	4000
Value of average inventory (₹.)	4,800	5,900	18,560	45,600	89,600
Annual total cost:	₹	₹	₹	₹	₹
(i) Cost of material (8000* 24.00/23.60 /23.20 /22.80 /22.40)	1,92,000	1,88,800	1,85,600	1,82,400	1,79,200
(ii) Ordering cost (No. of orders × 13)	260	208	65	26	13
(iii) Carrying cost (20% of value of average inventory)	960	1,180	3,712	9,120	17,920
Total annual cost (i + ii + iii)	**193220**	**190188**	**189377**	**191546**	**197133**

From the above calculations it is clear that the total annual cost of ₹1,89,377 is the lowest at on ordering quantity of 1,600 kgs; Hence, the most economical ordering quantity is 1,600 kgs.

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

Net profit ₹ 60 Lakhs

Outstanding 12% Preference shares ₹200 Lakhs

Number of Equity shares	**6 Lakhs**
Return on Investment	**20%**
Cost of capital	**16%**

What should be the approximate dividend payout ratio so as to keep the share price at ₹42 by using Walter's model? [7]

(b) **A company had the following balance sheet as on 31 March 2025:**

Liabilities	₹	Assets	₹
Equity Share Capital of ₹10 each	40,00,000	Fixed assets (net)	1,28,00,000
Reserves and Surplus	8,00,000	Current assets	32,00,000
15% Debentures	80,00,000		
Current liabilities	32,00,000		
	1,60,00,000		1,60,00,000

Additional information:

Fixed costs per annum (excluding Interest)	**₹. 32,00,000**
Variable operating costs ratio	**70%**
Total assets turnover ratio	**2.5**
Income tax rate	**40%**

Required:

Calculate the following and comment

- **Operating Leverage**
- **Financial Leverage**
- **Combined Leverage**
- **Earnings Per Share** **[7]**

Answer:

(a)

As per Walter's model, value per share is given by –

$$P = \frac{D + r/k\,(E - D)}{k}$$

where P = Current Market price per share, D = Dividend per share, E = Earnings per share, r = rate of return on investment,

k = cost of capital. Here, r = 20% i.e. 0.20, k = 16% i.e. 0.16

E= $\frac{60-(200*12\%)}{6} = ₹\ 6$

Let D/P ratio is y

So, D = ₹6×y

Conditionally, P = $\frac{D+r/k\ (E-D)}{k}$

or, 42 = $\frac{6y+\frac{0.20}{0.16}(6-6y)}{0.16}$

or, 6.72 = 6y + 7.50 – 7.50y

or, 1.5y = 0.78

or, y = 0.52

So the required dividend payout ratio is 52%.

(b)

(i) Preparation of Income Statement
Problem states that Total Assets Turnover Ratio is 2.5

In other words, Turnover/Total Assets = 2.5

Given, Total Assets = ₹ 1,60,00,000 Turnover = 1,60,00,000 × 2.5

Or, Turnover = ₹ 4,00,00,000

Income Statement

Particulars	₹
Sales	4,00,00,000
Less: Variable Cost (70% of Sales)	2,80,00,000
Contribution	1,20,00,000
Less: Fixed Cost	32,00,000
Earnings before Interest and Tax	88,00,000
Less: Interest on Debt (15% of ₹80 Lakhs)	12,00,000
Earnings before Tax	76,00,000
Less: Tax @ 40%	30,40,000
Earnings after Tax	45,60,000

Number of Equity Shares (40,00,000/10)	4,00,000
Earnings per Share (Earnings after Tax /Number of Shares)	₹11.40

(ii) **Calculation of Leverages:**

Degree of Operating Leverage $= \frac{Contribution}{EBIT} =$ 1,20,00,000/88,00,000 = 1.36

Degree of Financial Leverage $= \frac{EBIT}{EBT} =$ 88,00,000/76,00,000 = 1.16

Degree of Combined Leverage $= \frac{Contribution}{EBT} =$ 1,20,00,000/76,00,000 = 1.58

Comment:
The company's operating leverage of 1.36 indicates a relatively low level of business risk, as fixed costs are moderate compared to total costs. The financial leverage of 1.16 shows limited dependence on debt financing, implying a modest financial risk. Overall, the combined leverage of 1.58 suggests that earnings are not highly sensitive to changes in sales, and with an EPS of ₹11.40, the company is generating a satisfactory return for its shareholders.

8. (a) Explain the six core steps that may turn the data into user friendly information. [7]

(b) Explain the benefits of data analytics. [7]

Answer:

(a)

To make the data turn into user friendly information, it should go through six core steps:

- Collection of data: The collection of data may be done with standardized systems in place. Appropriate software and hardware may be used for this purpose. Appointment of trained staff also plays an important role in collecting accurate and relevant data.
- Organising the data: The raw data needs to be organized in an appropriate manner to generate relevant information. The data may be grouped, arranged in a manner that create useful information for the target user groups.
- Data processing: At this step, data needs to be cleaned to remove the unnecessary elements. If any data point is missing or not available, that also need to be addressed. The options available for presentation format for the data also need to be decided.
- Integration of data: Data integration is the process of combining data from various sources into a single, unified form. This step include creation of data network sources, a master server and users accessing the data from master server. Data integration eventually enables the analytics tools to produce effective, actionable business intelligence.
- Data reporting: Data reporting stage involves translating the data into a consumable format to

make it accessible by the users. For example, for a business firm, they should be able to provide summarized financial information e.g. revenue, net profit etc. The objective is, a user, who wants to understand the financial position of the company should get the relevant and accurate information.

- Data utilization: At this ultimate step, data is being utilized to back corporate activities and enhance operational efficiencies and productivity for the growth of business. This makes the corporate decision making really 'data driven'.

(b) Following are the benefits of data analytics:

- Improves decision making process:

  Companies can use the information gained from data analytics to base their decisions, resulting in enhanced outcomes. Using data analytics significantly reduces the amount of guesswork involved in preparing marketing plans, deciding what materials to produce, and more. Using advanced data analytics technologies, you can continuously collect and analyse new data to gain a deeper understanding of changing circumstances.

- Increase in efficiency of operations

  Data analytics assists firms in streamlining their processes, conserving resources, and increasing their profitability. When firms have a better understanding of their audience's demands, they spend less time creating advertising that do not fulfil those needs.

- Improved service to stakeholders

  Data analytics gives organisations with a more in-depth understanding of their customers, employees and other stake holders. This enables the company to tailor stakeholders' experiences to their needs, provide more personalization, and build stronger relationships with them.