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]**

(i) Relationship between annual effective rate of interest and annual nominal rate of interest is, if frequency of compounding is more than 1:
(a) Effective Rate < Nominal rate
(b) Effective Rate > Nominal rate
(c) Effective Rate = Nominal rate
(d) none of the above

(ii) Which of the following are the benefits of data analytics?
(a) Improves decision making process
(b) Increase in efficiency of operations
(c) Improved service to stakeholders
(d) All of the above

(iii) XBRL is the abbreviated form of:
(a) eXtensible Business Reporting Language
(b) eXtensive Business Reporting Language
(c) eXtended Business Reporting Language
(d) eXtensive Business Reporting Language

(iv) A scatter plot displays several unique data points:
(a) on a single graph.
(b) On two different graphs
(c) On four different graphs
(d) None of the above

(v) If the fixed cost of production is zero, which one of the following is correct?
(a) Operating Leverage is zero
(b) Financial Leverage is zero
(c) Combined Leverage is zero
(d) None of the above

(vi) The Degree of Operating Leverage (DOL) and the Degree of Financial Leverage of Alanta Ltd. are 3 and 1.67 respectively. If the management of the company targets to increase the EPS by 10%, by how much percentage should sales volume be increased? (Rounded off your answer to the nearest value.)
(a) 5.00%

(b) 3.40%
(c) 3.00%
(d) 2.00%

(vii) Average collection period is 2 months, cash sales and average receivables are ₹ 5,00,000 and ₹ 6,50,000 respectively. The sales amount would be-
(a) ₹ 40,00,000
(b) ₹ 42,00,000
(c) ₹ 44,00,000
(d) ₹ 48,50,000

(viii) Conversion 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

(ix) What is the value of a levered firm L Ltd. if it has the same EBIT as an unlevered firm U Ltd., (with value of ₹ 700 lakh), has a debt of ₹ 200 lakh, tax rate is 35% under M-M approach?
(a) ₹ 770 lakh
(b) ₹ 500 lakh
(c) ₹ 630 lakh
(d) ₹ 900 lakh

(x) Initial investment ₹ 20 Lakh. Expected annual cash flows ₹ 6 Lakh for 10 years. Cost of capital @15%.
Profitability Index (PI) is -
[Cumulative discounting factor @ 15% for 10 years = 5.019)
(a) 1.51
(b) 1.71
(c) 2.51
(d) 2.91

(xi) Capital Budgeting deals with:
(a) Long-term Decisions
(b) Short-term Decisions
(c) Both (a) and (b)
(d) Neither (a) nor (b).

(xii) Five years ago, KPM Ltd issued 12% irredeemable debentures at ₹ 105, a ₹ 5 premium to their par value of ₹ 100. The current market price of these debentures

is ₹ 95. If the company pays corporate tax at a rate of 35 % what is its current cost of debenture capital?
(a) 6.5%
(b) 7.24%
(c) 8.21%
(d) 9.00%

(xiii) In case the firm is all-equity financed, the WACC would be equal to:
(a) Cost of Debt
(b) Cost of Equity
(c) Neither (a) nor (b)
(d) Both (a) and (b).

(xiv) DuPont Analysis deals with:
(a) Analysis of Current Assets
(b) Analysis of Profit
(c) Capital Budgeting
(d) Analysis of Fixed Assets

(xv) XYZ Ltd. has earned 8% Return on Total Assests of ₹ 50,00,000 and has a Net Profit Ratio of 5%. Find out the Sales of the firm.
(a) ₹ 4,00,000
(b) ₹ 2,50,000
(c) ₹ 80,00,000
(d) ₹ 83,33,333.

SECTION – B

(Answer any five questions out of seven questions given. Each question carries 14 Marks.)
[5x14=70]

2. **(a)** Distinguish between Hedge Funds and Mutual Funds. **[7]**

(b) Explain various applications of data mining techniques in finance and accounting. **[7]**

3. **(a)** From the following information, prepare a summarized Statement of Assets and Liabilities as on 31st March, 2024:

(i) Working Capital	₹1,20,000
(ii) Reserves & Surplus	₹ 80,000
(iii) Bank Overdraft	₹ 20,000
(iv) Proprietary Ratio	0.75
(v) Current Ratio	2.50
(vi) Liquid Ratio	1.50

Your workings should form a part of your answer. **[7]**

(b) From the following Summarised Statement of Assets and Liabilities of XYZ Ltd., prepare a Statement of Changes in the Working Capital.

	31st March			31st March	
Liabilities	2023 (₹)	2024 (₹)	Assets	2023 (₹)	2024 (₹)
Equity Share Capital	3,00,000	4,00,000	Goodwill	1,15,000	90,000
8% Preference Share Capital	1,50,000	1,00,000	Land & Buildings	2,00,000	1,70,000
Profit & Loss Account	30,000	48,000	Plant & Machinery	80,000	2,00,000
General Reserve	40,000	70,000	Debtors	1,60,000	2,00,000
Proposed Dividend	42,000	50,000	Stock	77,000	1,09,000
Creditors	55,000	83,000	Bills Receivable	20,000	30,000
Bills Payable	20,000	16,000	Cash in hand	15,000	10,000
Provision for Taxation	40,000	50,000	Cash at Bank	10,000	8,000
	6,77,000	8,17,000		6,77,000	8,17,000

Following additional information are available:

(i) Depreciation of ₹ 10,000 and ₹ 20,000 have been charged on Plant & Machinery and Land & Buildings respectively in 2024.

(ii) Interim dividend of ₹ 20,000 has been paid in 2024.

(iii) Income tax of ₹ 35,000 has been paid in 2024. **[7]**

4. (a) From the following balance sheet, prepare a common size statement and comment.

Particulars	Amount (₹) 31.03.2023	Amount (₹) 31.03.2024
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) Given below is the Statement of Assets and Liabilities of a company as at 31st December, 2023:

Liabilities	₹	Assets	₹
Equity share capital 40000 shares of ₹ 100 each	4,00,000	Fixed Assets	6,00,000
Reserve and surplus	2,60,000	Investments	1,00,000
8% debentures	1,70,000	Current assets	2,80,000
Current Liabilities			
Short term loans	1,00,000		
Trade creditors	50,000		
	9,80,000		9,80,000

Calculate the company's weighed average cost of capital using balance sheet valuations. The following additional information are also available:

(i) 8% Debentures were issued at par.

(ii) All interests' payments are up to date and equity dividend is currently 12%.

(iii) Short term loan carries interest at 18% p.a.

(iv) The shares and debentures of the company are quoted on the Calcutta Stock Exchange and current Market Prices are as follows:
Equity Shares at ₹ 14 each and 8% Debentures at ₹ 98 each.

(v) The rate of tax for the company may be taken at 50%. **[7]**

5. (a) ZZZ Co. has four potential projects all with an initial cost of ₹ 15,00,000. The capital budget for the year will only allow the company to take up only one of the three projects. Given the discount rates and the future cash flows of each project, evaluate which project should they accept.

Project	Annual Net Cash Flows per year for five years (₹)	Discount Rates
A	3,50,000	4%
B	4,00,000	8%
C	5,00,000	10%

[7]

(b) Anurag Mills Ltd. has number of machines that were used to make a product that the firm has phased out of its operations. An existing machine was originally purchased six years ago for ₹ 5,00,000 and is being depreciated by the straight line method; its remaining useful life is 4 years. No salvage value is expected at the end of the useful life. It can currently be sold for ₹1,50,000. The machine can also be modified to produce another product at a cost of ₹2,00,000. The modifications would not affect the useful life, or salvage value, and would be depreciated using the straight line method.

If the firm does not modify the existing machine, it will have to buy a new machine at a cost of ₹ 4,40,000, (no salvage value) and the new machine would be depreciated over 4 years. The engineers estimate that the cash operating costs with the new machine would be ₹ 25,000 per year less than with the existing machine. Cost of capital is 15 per cent and corporate tax rate is 35 per cent.

Advise the company whether the new machine should be bought, or the old equipment modified. Assume straight line method of depreciation for tax purposes and loss on sale of existing machine can be claimed as short-term capital loss in the current year itself.
[Given: PVIFA (15% 4 years) = 2.855] **[7]**

6. **(a)** The management of Camellia Ltd. has called for a statement showing the working capital needed to finance a level of activity of 3,00,000 units of output for the year ended March 31, 2024. The cost structure for the company's product, for the above mentioned activity level, is detailed below:

	Cost per unit (₹)
Raw materials	20
Direct labour	5
Overheads	15
Total cost	40
Profit	10
Selling price	50

Past trends indicate that the raw materials are held in stock, on an average, for two months. Work-in-process (50 per cent complete) will approximate to ½ month's production. Finished goods remain in warehouse, on an average, for 1 month. Suppliers of materials extend 1 month's credit. Two months' credit is normally allowed to debtors. A minimum cash balance of ₹ 25,000 is expected to be maintained. The production pattern is assumed to be even during the year (12 months).
Required:
Prepare a statement of Working Capital determination. **[7]**

(b) The annual demand for an item is 3,200 units. The unit cost is ₹6 and inventory carrying charges is 25% p.a. If the cost of one procurement is ₹150, determine:
(A) E.O.Q (B) No. of orders per year (C) Time between two consecutive orders. **[7]**

7. **(a)** From the following data, compute the value of each firm and value of each equity share as per the Modigliani-Miller approach:

	X (₹)	Y (₹)	Z (₹)
EBIT (₹)	13,00,000	13,00,000	13,00,000
No. of shares	3,00,000	2,50,000	2,00,000
12% debentures (₹)		9,00,000	10,00,000

Every firm expect 12% return on investment. **[7]**

(b) The operating income of Hypothetical Ltd amounts to ₹1,86,000. It pays 35% tax on its income. Its capital structure consists of the following:

	(₹)
14% Debentures	5,00,000
15% Preference shares	1,00,000
Equity shares (₹100 each)	4,00,000

Determine:

(i) the firm's EPS;

(ii) the percentage change in EPS associated with 30% change (both increase and decrease) in EBIT;

(iii) the degree of financial leverage at the current level of EBIT;

(iv) the additional data do you need to compute operating as well as combined leverage. **[7]**

8. (a) Describe Quantitative Financial Data and Qualitative Financial Data. Explain Nominal Scale and Ratio Scale in the context of types of data. **[7]**

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