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) If annual effective rate of interest is 10.25% per annum and nominal rate of return is 10% per annum what is the frequency of compounding?
(a) 1
(b) 3
(c) 2
(d) 4

(ii) To make the data turn into user friendly information, it should go one/more of following core steps:
(a) Collection of data
(b) Organising the data
(c) Data processing
(d) All of the above

(iii) Data science plays an important role in:
(a) Risk analytics
(b) Customer data management
(c) Consumer analytics
(d) All of the above

(iv) Maps may be used for displaying:
(a) Pincode
(b) Country name
(c) State abbreviation
(d) All of the above

(v) The degree of operating leverage and degree of financial leverage of VINTEX LTD. are 2.00 and 1.5 respectively. What will be the percentage change in EPS, if the sale increases by 10%?
(a) 10% increase
(b) 15% increase
(c) 30% increase
(d) 35% increase

(vi) Operating cycle is also called as _____
(a) Business cycle
(b) Working capital cycle
(c) Working cycle
(d) Current asset cycle

(vii) At Indifference level of EBIT, different capital has ___________.
(a) Same EBIT
(b) Same EPS
(c) Same PAT
(d) Same PBT

(viii) 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

(ix) The following information is given for a project:
Annual cash inflow ₹ 8,00,000
Useful life 4 years
Payback period 2.855 years
The cost of the project would be –
(a) ₹ 22,80,000
(b) ₹ 22,84,000
(c) ₹ 22,86,000
(d) ₹ 22,87,800

(x) A proposal is not a Capital Budgeting proposal if it:
(a) is related to Fixed Assets
(b) brings long-term benefits
(c) brings short-term benefits only
(d) has very large investment

(xi) Advantage of debt financing is:
(a) Interest is tax-deductible
(b) It reduces WACC
(c) It does not dilute owners control
(d) All of the above.

(xii) ABC Ltd. has a Current Ratio of 1.5: 1 and Net Current Assets of ₹ 5,00,000. What are the Current Assets?
(a) ₹5,00,000
(b) ₹10,00,000
(c) ₹15,00,000
(d) ₹25,00,000

(xiii) XYZ Ltd. has earned 8% Return on Total Assets 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.

(xiv) Secondary Market in India is regulated by:
(a) Reserve Bank of India
(b) Securities and Exchange Board of India
(c) Ministry of Finance
(d) Forward Market Commission

(xv) Return on Assets and Return on Investment Ratios belong to:
(a) Liquidity Ratios
(b) Profitability Ratios
(c) Solvency Ratios
(d) Turnover

SECTION – B

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

2. (a) Explain the regulatory role of RBI. **[7]**

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

3. (a) Following are the ratios to the trading activities of National Traders Ltd:

Debtors velocity	3 months
Stock velocity	8 months
Creditors velocity	2 months
Gross profit ratio	25%

Gross profit for a year ended 31st December, 2022 amounts to ₹ 4,00,000
Closing stock of the year is ₹ 10,000 above the opening stock.
Bills receivable amount to ₹ 25,000 and Bills payable to ₹ 10,000.

Compute:
(A) Sales
(B) Sundry Debtors
(C) Closing stock &
(D) Sundry creditors. **[7]**

3. (b) The Balance Sheets of A, B, & C Co. Ltd. as at the end of 2021 and 2022 are given below:

Liabilities	2021 (₹)	2022 (₹)	Assets	2021 (₹)	2022 (₹)
Share Capital	1,00,000	1,50,000	Freehold land	1,00,000	1,00,000
Share premium		5,000	Plant at cost	1,04,000	1,00,000
General Reserve	50,000	60,000	Furniture at cost	7,000	9,000
Profit & Loss Account	10,000	17,000	Investments	60,000	80,000
6% Debentures	70,000	50,000	Debtors	30,000	70,000
Provision for Depreciation on Plant	50,000	56,000	Stock	60,000	65,000
Provision for Dep. on Furniture	5,000	6,000	Cash	30,000	45,000
Provision for taxation	20,000	30,000			
Sundry Creditors	86,000	95,000			
	3,91,000	4,69,000		3,91,000	4,69,000

A Plant purchased for ₹ 4,000 (Depreciation ₹ 2,000) was sold for Cash for ₹ 800 on September 30, 2022. On June 30, 2022 an item of furniture was purchased for ₹ 2,000. These were the only transactions concerning fixed assets during 2022. A dividend of 22½ % on original shares was paid. You are required to prepare Funds Flow Statement and verify the results by preparing a schedule of changes in Working Capital. **[7]**

4. (a) Presented below are revenue and expense data for the XYZ Company:

	2022 (₹)	2021 (₹)
Sales	8,16,000	6,56,500
Sales returns and allowances	16,000	6,500
Cost of goods sold	4,00,000	3,12,000
Selling Expenses	2,00,000	1,30,000
General Expenses	1,20,000	78,000
Miscellaneous Income	6,400	6,500
Income Tax	32,000	67,600

You are required to prepare a comparative statement for the year 2022 and 2021 for the company and also comment on the relationships revealed in the comparative income statement. **[7]**

4.(b) The following are the extracts from the financial statements of ABC Ltd.

	(₹ In lakhs)
Operating profit	105
Less: Interest on debenture	33
	72
Less: Income-tax	36
Net Profit	36
Equity share capital (share of ₹ 10 each)	200
Reserves ad surplus	100
15% Non-convertible debentures	220
	520

The market price per equity share is ₹ 12 and per debenture is ₹ 93.75. You are required to calculate:

(A) the earnings per share.

(B) the percentage of cost of capital to the company for the debenture fund and the equity. **[7]**

5.(a) A project requires an initial investment of ₹ 2,25,000 and is expected to generate the following net cash inflows:

Year 1 (2019): ₹ 95,000;
Year 2 (2020): ₹ 80,000;
Year 3 (2021): ₹ 60,000;
Year 4 (2022): ₹ 55,000.

Assess and compute net present value of the project if the minimum desired rate of return is 12%. **[7]**

5.(b) United Industries Ltd. has an investment budget of ₹ 100 lakhs for 2023-24. It has short listed two projects A and B after completing the market and technical appraisals. The management wants to complete the financial appraisal before making the investment. Further particulars regarding the two projects are given below:

	(₹ Lakhs)	
Particulars	A	B
Investment required	100	90
Average annual cash inflow before depreciation and tax (estimate)	28	24

Salvage value: Nil for both projects. Estimate life – 10 years for both projects.
The company follows straight line method of charging depreciation. Its tax rate is 50%.

You are required to calculate:

i) Payback period and ii) IRR for the 2 projects.

Note: P.V of an annuity of ₹ 1 for ten years at different discount rate is given below:

Rate %	10	11	12	13	14	15
Annuity Value of return	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188

[7]

6.(a) The board of Directors of Nanak Engineering Company Private Ltd. request you to prepare a statement showing the Working Capital requirements forecast for a level of activity of 1,56,000 units of production.

The following information is available for your calculation:

A.

	Per unit (₹)
Raw materials	90
Direct labour	40
Overheads	75
	205
Profits	60
Selling price per unit	265

B.

i) Raw materials are in stock on average one month.
ii) Materials are in process, on average 2 weeks.
iii) Finished goods are in stock, on average 1 month.
iv) Credit allowed by supplier one month.
v) Time lag in payment from debtors two months.
vi) Lag in payment of wages 1½ week.
vii) Lag in payment of overheads is one month.

20% of the output is sold against cash. Cash in hand and at bank is expected to be ₹60,000. It is to be assumed that production is carried on evenly throughout the year, wages and overheads accrue similarly and a time period of 4 weeks is equivalent to a month. **[7]**

6.(b) Surya Industries Ltd. is marketing all its products through a network of dealers. All sales are on credit and the dealers are given one-month time to settle bills. The company is thinking of changing the credit period with a view to increase its overall profits. The marketing department has prepared the following estimates for different periods of credit:

Particulars	Present Policy	Plan I	Plan II	Plan III
Credit period (in months)	1	1.5	2	3
Sales (₹ Lakhs)	120	130	150	180
Fixed costs (₹ Lakhs)	30	30	35	40
Bad debts (% of sales)	0.5	0.8	1	2

The company has a contribution/sales ratio of 40% further it requires a pre-tax return on investment at 20%. Examine each of the above proposals and recommend the best credit period for the company **[7]**

7.(a) Assuming no taxes and given the earnings before interest and taxes (EBIT), interest (I) at 10% and equity capitalisation rate (K_e) below, calculate the total market value of each firm under Net Income approach:

Firms	EBIT	I	K_e
	₹	₹	
X	2,00,000	20,000	12.0%
Y	3,00,000	60,000	16.0%
Z	5,00,000	2,00,000	15.0%
W	6,00,000	2,40,000	18.0%

Also determine the weighted average cost of capital for each firm. **[7]**

7.(b) Calculate the degree of operating leverage (DOL), degree of financial leverage (DFL) and the degree of combined leverage (DCL) for the following firms and interpret the results.

	Firm K	Firm L	Firm M
1. Output (Units)	60,000	15,000	1,00,000
2. Fixed costs (₹)	7,000	14,000	1,500
3. Variable cost per unit (₹)	0.20	1.50	0.02
4. Interest on borrowed funds (₹)	4,000	8,000	—
5. Selling price per unit (₹)	0.60	5.00	0.10

[7]

8. (a) Interpret the various types of data used in Finance and Costing. **[7]**

8. (b) Describe Data Analytics and the steps involved in Data Analytics. **[2+5=7]**