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

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

Where considered necessary, suitable assumptions may be made and

clearly indicated in the answer.

Answer Question No. 1 and any five from Question No. 2, 3, 4, 5, 6, 7 and 8.

SECTION - A

1.   (a)   **Choose the correct alternative**   [1 × 12 = 12]

   (i)   "Shareholders' wealth" in a firm is reflected by:

   a.   the number of people employed in the firm.

   b.   the book value of the firm's all assets less the book value of its all liabilities.

   c.   the amount of salary paid to its employees.

   d.   the market price per share of the firm.

   (ii)   ROI (Return on Investment) can be decomposed into the following ratios:

   a.   Overall Turnover Ratio and Current Ratio

   b.   Net Profit Ratio and Fixed Assets Turnover

   c.   Working Capital Turnover Ratio and Net Profit Ratio

   d.   Net Profit Ratio and Total Assets Turnover Ratio

   (iii)   The excess of Current Assets over Current Liabilities is called:

   a.   Net Current Assets

   b.   Net Working Capital

   c.   Working Capital

   d.   All of the above

   (iv)   Which of the following is not a source of fund?

   a.   Issue of Capital

   b.   Issue of Debenture

   c.   Decrease in Working Capital

   d.   Increase in Working Capital

(v)   The following is not a Discounted Cash Flow Technique:

    a.   NPV

    b.   Profitability Index

    c.   Accounting of Average Rate of Return

    d.   IRR

(vi)   The 'Dividend-Payout Ratio' is equal to

    a.   The Dividend yield plus the capital gains yield

    b.   Dividends per share divided by Earning per Equity Share

    c.   Dividends per share divided by par value per share

    d.   Dividends per share divided by current market price per share

(vii) 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

(viii) Short selling refers to

    a.   Buying shares and then selling them on the same day

    b.   Selling shares without owning them

    c.   Selling some shares out of a large holding

    d.   Continuously selling shares in lots.

(ix)   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.

(x)   Which of the following is a type of cloud computing?

    a.   Private cloud

    b.   Public cloud

    c.   Hybrid cloud

    d.   All of the above

(xi) Which of the following is a widely used graph for data visualisation?

     a. Bar chart

     b. Pie chart

     c. Histogram

     d. All of the above

(xii) Binomial distribution applies to attributes that are categorised into

     a. Two mutually exclusive classes

     b. Three mutually exclusive classes

     c. Four mutually exclusive classes

     d. Five mutually exclusive classes

(b) State True or False   **[1 × 7 = 7]**

(i) Treasury Bills are short term instruments issued by the Reserve Bank of India to address short term liquidity shortfalls.

(ii) While calculating cost of redeemable debt, it is necessary to consider the repayment of the principal, but the interest can be ignored.

(iii) Debt Service Coverage Ratio indicates the liquidity of a firm in relation to its ability to meet projected daily expenditure from operations.

(iv) Factoring is a fund based financial service.

(v) Modigliani and Miller Hypothesis provides irrelevance approach of capital structure theory.

(vi) Scatter plots are important to identify whether two variables are independent or not.

(vii) Walter model assumes constant internal rate of return and cost of capital.

(c) Fill in the blanks   **[1 × 6 = 6]**

(i) Normal distribution has a symmetric _____ representation.

(ii) _____ is called the "Chemistry of money".

(iii) A project is accepted under PI method if PI is _____ than 1.

(iv) Beta is the measure of _____ risk.

(v) Treasury bill is a _____ market instrument.

(vi) Inventory turnover ratio is the measure of _____.

SECTION – B

2.   (a)   Prepare a list of different types of systematic risks.

     (b)   (i)   How are primary market and secondary market related to each other?

            (ii)   Demonstrate the features of certificate of deposits.   **[6 + (5+4) = 15]**

3.   (a)   The following information has been provided by XYZ Ltd.

<div align="center">Balance Sheet of XYZ Ltd.</div>

		Particulars	Note No.	As on 31.03.2021	As on 31.03.2020
I		Equity and Liabilities			
	1.	Shareholders' fund			
		(a) Share Capital		18,40,000	18,40,000
		(b) Reserves and Surplus	1	6,64,000	6,08,000
	2.	Share application money pending allotment		Nil	Nil
	3.	Non-Current Liability			
		(a) Long Term Borrowings (10% Debentures)		5,60,000	7,20,000
	4.	Current Liabilities			
		(a) Trade Payables		7,68,000	8,24,000
		(b) Short term Provisions (Provision for Tax)		96,000	1,04,000
		Total		39,28,000	40,96,000
II		Assets			
	1.	Non-current Assets			
		(a) Fixed Assets			
		(i) Tangible Assets	2	14,08,000	12,96,000
		(b) Non-current Investment		5,92,000	8,80,000
	2.	Current Assets			
		(a) Inventories		8,48,000	6,56,000
		(b)Trade Receivables		3,44,000	5,36,000
		(c)Cash and Cash Equivalent		7,20,000	7,20,000
		(d)Short term loan and advances (Prepaid Expenses)		16,000	8,000
				39,28,000	40,96,000

Notes to Accounts:

1.	Reserve and Surplus	As on 31.03.2021	As on 31.03.2020
	Balance of Profit	1,84,000	1,28,000
	General Reserve	4,80,000	4,80,000
		6,64,000	6,08,000
2.	Tangible Assets		
(a)	Land	12,00,000	12,00,000
	Machinery (Gross Block)	5,60,000	4,16,000
	Provision for depreciation	3,52,000	3,20,000
(b)	Machinery (Net Block)	2,08,000	96,000
	(a)+(b)	14,08,000	12,96,000

Additional information:

(i)   10% dividend was paid during the year.

(ii)   Machinery for ₹ 24,000 was purchased and old machinery costing ₹ 96,000 (accumulated depreciation ₹ 48,000) was sold for ₹ 32,000.

(iii)   ₹ 1,60,000, 8% debentures were redeemed by purchase from open market at ₹96 for a Debenture of ₹ 100. Redemption was carried out on 31.03.2021.

(iv)   Investments worth ₹ 2,88,000 were sold at a loss of ₹ 8,000.

(v)   Actual income tax liability for the year amounted to ₹ 80,000.

Prepare a Cash Flow Statement of XYZ Ltd. for the year ended 31.03.2021.

(b)   From the information given below relating to Distress Ltd., Calculate Altman's Z-score and comment:

(i)   Working Capital to Total Assets   = 30%

(ii)   Retained Earnings to Total Assets = 40%

(iii)   EBIT to Total Assets   = 25%

(iv)   Market Value of Equity Shares to Book Value of Total Debt = 130%

(v)   Sales to Total Assets   = 1.5 times   **[9 + 6 = 15]**

4.   (a)   Given below is the Statement of Assets and Liabilities of a company as at 31st December, 2016.

Liabilities	₹	Assets	₹
Equity share capital	4,00,000	Fixed Assets	6,00,000
40000 shares of ₹ 10 each		Investments	1,00,000
Reserve and surplus	2,60,000	Current assets	2,80,000
8% debentures	1,70,000		
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%.

(b)   What is meant by data cleaning? Discuss the benefits of data cleaning.

[9 + (2+4) = 15]

5.   (a)   (i)   XYZ Ltd. has 1,00,000 outstanding shares of ₹10 each. The company earns a rate of 24% on its investments and retains 50% of earnings as a policy. If Cost of Capital is 18%, calculate price of the share according to Gordon's Model. The company has total investment of around ₹10,00,000 in assets. If payout ratio changes to 10%, 90% how will share price change? Also comment on the optimal dividend policy for XYZ Ltd. as per Gordon's Model.

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

Net profit ₹30 Lakhs

Outstanding 12% preference shares ₹100 Lakhs

Number of equity shares 3 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?

(b)   Prepare a list of the key factors that an analyst should keep in mind during data visualization to avoid common errors.   **[(6 + 3) + 6 = 15]**

6. (a) A firm proposes to market a cheaper variety of its existing brand to be sold for ₹20 per unit, estimated product-life being five years. The sales volume for the five years has been estimated to be 30,000 units for the first year, 40,000 units for each of the next two years and 20,000 units for each of the last two years. The variable cost p.u. is ₹10. Production of the cheapest brand will entail an initial expenditure of ₹4,50,000 in purchasing and installing a new plant with estimated economic life of five years and scrap value of ₹50,000. The fixed cost of ₹2,00,000 per annum including depreciation on the plant on straight-line basis will be needed for producing and marketing the cheaper brand. Introduction of this cheaper variety is also likely to have an adverse impact on the demand of the existing dearer brand resulting in loss of contribution estimated at ₹20,000 per annum. Assuming cost of Capital to be 10% and marginal tax rate to be 40%, you are required to evaluate proposal and give your reasoned recommendation as to its acceptance or rejection. The PV factors at 10% for five years are 0.909, 0.826, 0.751, 0.683 and 0.62.

(b) X Ltd. is considering a project with following Cash Flow pattern.

Year	1	2	3	4	5
CIAT (₹)	10,000	15,000	20,000	25,000	20,000

Initial investment of the project is ₹ 60,000 and Cost of Capital is 10% p.a. Calculate DPBP. **[9 + 6 = 15]**

7. (a) GOLDEN GARMENT LTD. manufactures readymade garments and sells them on credit through a network of dealers. Its present sale is ₹60 lakh per annum with 20 days credit period. The company is contemplating an increase in the credit period with a view to increasing sales. Present variable costs are 70 per cent of sales and the total fixed costs ₹8 lakh per annum.

The company expects pre-tax return on investment @25per cent. Some other details are given as under:

Proposed credit policy	Average collection period (days)	Expected annual sales (Amount in ₹ lakh)
I	30	65
II	40	70
III	50	74

Required: Advise the management as to which credit policy should the company adopt? Present your answer in a tabular form. Assume 360-day a year. Calculations should be made up to two digits after decimal. Ignore taxation.

(b) 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, 2022. 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: Analyse the working capital requirement of the company.   **[6 + 9 = 15]**

8. (a) Distinguish between the following:

i) Weak AI vs. Strong AI

ii) Deep learning vs. machine learning

(b) 'While data analytics is an important tool for decision making, managers should never take an important analysis at face value.' – Analyse the underlying essence of the statement.   **[(4 + 5) + 6 = 15]**