

D 136305

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Name.....

Reg. No.....

**THIRD SEMESTER M.B.A. DEGREE (REGULAR) EXAMINATION****JANUARY 2026**

M.B.A.

BUS 3EB 05—FINANCIAL ANALYTICS

(2024 Scheme)

Time : Three Hours

Maximum : 60 Marks

**Part A***Answer all questions.**Each question carries 2 marks.*

1. Does exploratory data analysis improves the accuracy of financial forecasting models ?
2. What is the significance of conducting comparative statement analysis in financial evaluation ?
3. Differentiate between market risk and credit risk with suitable examples.
4. Explain the concept of time series analysis in financial forecasting.
5. How a decision tree algorithm can be used to classify insurance claims into categories such as low-risk, suspicious, and highly suspicious.

(5 × 2 = 10 marks)

**Part B***Answer any four questions from this Part.**Each question carries 4 marks.*

6. Explain the importance of financial data sources in business analytics. How do reliable data sources influence the accuracy of financial decisions ?
7. A firm reports sales of ₹. 50,00,000 and a net profit of ₹. 5,00,000 for the current financial year. Its Asset Turnover is 1.6 times and Equity Multiplier is 2.4 times. Calculate the Return on Equity (ROE) and identify which component of the DuPont has the greatest impact on ROE.
8. A two-asset portfolio : Weight A = 0.6, Weight B = 0.4 and  $\sigma_A = 12\%$ ,  $\sigma_B = 18\%$ , Correlation = 0.3. Compute portfolio variance, portfolio SD and recommend changes to reduce risk.

**Turn over**

9. Explain how technical indicators such as Moving Average and Relative Strength Index are used to analyse stock price behaviour.
10. Describe the different types of financial forecasting models. How should an analyst choose the most appropriate model for a given situation ?
11. A company reports the following data for two years

Particulars	2024 (₹.)	2025 (₹.)
Sales	4,20,000	5,10,000
Cost of Goods Sold	2,52,000	2,90,000
Operating Expenses	84,000	96,000
Interest Expense	18,000	21,000
Income Tax	24,000	30,000

Prepare the Common-Size Income Statement for both years by expressing each item as a percentage of sales.

(4 × 4 = 16 marks)

### Part C

Answer any **three** questions from this Part.

Each question carries 8 marks.

12. Explain the process of developing a comprehensive financial forecasting model for a business experiencing seasonal and cyclical revenue patterns.
13. The Net Profit of XYZ Ltd. for the year ended 31<sup>st</sup> March 2025 is ₹. 3,20,000. During the year, the company recorded depreciation of ₹. 70,000, and a gain on sale of equipment of ₹. 20,000. Trade receivables increased by ₹. 40,000, inventories decreased by ₹. 25,000, and trade payables decreased by ₹. 15,000.

The company purchased new equipment worth ₹. 1,20,000 during the year and raised bank loan of ₹. 2,00,000. It also paid interest of ₹. 30,000 and dividends of ₹. 50,000. The opening cash balance was ₹. 90,000. Using the above information, prepare a Cash Flow Statement (Indirect Method) and determine the closing cash balance for the year ended 31<sup>st</sup> March 2025.

14. The following information is available with portfolio manager.

Asset	Expected Return	Standard Deviation	Weight	Correlation with A	Correlation with B	Correlation with C
A	16 %	20 %	40 %	1.00	0.45	0.25
B	12 %	15 %	35 %	0.45	1.00	0.50
C	9 %	10 %	25 %	0.25	0.50	1.00

Required :

- Compute the expected return of the portfolio.
  - Compute the covariance between all pairs of assets and use them to calculate the portfolio variance and standard deviation.
  - Evaluate whether the portfolio is efficiently diversified. Discuss in light of Modern Portfolio Theory (MPT).
15. A manufacturing firm wants to forecast monthly production demand. How can regression analysis and time series decomposition be combined to build an accurate forecasting model, and under what conditions is such a hybrid approach most useful ?
16. A bank wants to develop a machine learning-based credit scoring model. Outline :
- Steps in preparing the dataset.
  - Choice between logistic regression and decision tree.
  - Performance evaluation metrics.
  - Ethical issues in automated credit scoring .

(3 × 8 = 24 marks)

### Part D

#### Compulsory Question.

10 marks.

17. Global FinTech Solutions is evaluating an expansion of its digital payment operations into three emerging markets over the next four years. The company forecasts rapid growth but also expects significant financial and operational risks. The following information is available :

**Turn over**

Current Annual Revenue : ₹. 1.8 billion

Expected Annual Revenue Increase After Expansion : ₹. 350 million

Initial Investment Required : ₹. 450 million

Additional Working Capital Requirement : ₹. 120 million

Cost of Capital : 11 %

Beta of the Firm : 1.15

Market Risk Premium : 6 %

Risk-Free Rate : 3 %

Corporate Tax Rate : 30 %

Expected Increase in Operating Costs Due to Expansion : ₹. 90 million annually

Using the information provided :

- a) Compute the firm's expected return using CAPM and compare it with the firm's weighted average cost of capital (WACC), assuming the firm's capital structure consists of 70 % equity and 30 % debt, and the cost of debt is 8 % (after tax). (3)
- b) Evaluate the financial viability of the expansion by calculating :  
Incremental annual net income after considering increased revenues and operating costs  
Whether the incremental return justifies the combined investment of fixed capital and additional working capital. Whether the return exceeds the firm's WACC. (3)
- c) Critically examine the key risks the company may face. (2)
- d) Propose advanced risk mitigation strategies. (2)

(10 marks)