

RAN-2508000606010002**B.Com. (Data Sciences) Examination March - 2026****Major - Financial Analytics (Theory)****Time: 1.30 Hours]****[Total Marks: 35**

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book (2) Figures to the right indicates marks of the questions. (3) Necessary calculations will be treated as part of the answer.	Seat No.: Student's Signature
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- Q-1. Answer the following questions: (Any Five) 10**
- A) An investment portfolio designed by a student has an expected return of 16% and a standard deviation (risk) of 10%. If the current risk-free rate is 5%, calculate the Sharpe Ratio.
- B) A new data analytics project requires an initial investment of 75,000. It is expected to generate a uniform annual cash flow of 15,000 for the next 6 years. Calculate the Payback
- C) What is meant by corporate financial predictive modeling?
- D) What is a Stock Market?
- E) What is the Capital Asset Pricing Model (CAPM)?
- F) List the two machine learning models mentioned specifically for evaluating Credit Risk analysis
- G) Name two machine learning models used for predicting share prices
- Q-2. A) Explain the concept of total risk in portfolio management. Distinguish between systematic and unsystematic risk and describe how diversification reduces risk. Using a diagram, explain how the Efficient Frontier is formed and how it relates to total portfolio risk. 13**
- OR**
- Q-2. A) Explain Artificial Neural Networks. 07**
- Q-2. B) What is Value at Risk (VaR)? Explain Methods of Calculating VaR. 06**
- Q-3. A) Explain Logistic Regression model and Decision Tree. 12**
- OR**
- Q-3. A) Calculate A data science firm is considering a project with an initial investment of 500,000 INR. The project is expected to generate the following cash flows over 4 years: Year 1: 150,000; Year 2: 200,000; Year 3: 250,000; Year 4: 300,000, If the cost of capital is 10%. State whether the project should be accepted. (PV Factor for 4 years are 0.909, 0.826, 0.751, 0.683) 06**
- Q-3. B) Explain Support Vector Machine (SVM). 06**