

**Paper / Subject Code: 7463467 / AIFBA**

22/02/2026 Duration: 3Hr [Max Marks: 80]

QP CODE: T523452

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- N.B.:** (1) Question No. 1 is Compulsory.  
(2) Attempt any THREE questions out of the remaining FIVE.  
(3) All questions carry equal marks.  
(4) Assume suitable data, if required and state it clearly.
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|------------|---|-------------|
| <b>Q1.</b> | Attempt any FOUR  | <b>[20]</b> |
| <b>a)</b>  | What is vectorization in the context of backtesting trading strategies?   | <b>[05]</b> |
| <b>b)</b>  | Explain various Digital Driven processes used in Technology.  | <b>[05]</b> |
| <b>c)</b>  | What are two commonly used representations for deploying fraud analytics models?  | <b>[05]</b> |
| <b>d)</b>  | Discuss on Markov Regime Switching Model.   | <b>[05]</b> |
| <b>e)</b>  | Why is it important for a prediction-based trading strategy to accurately forecast large market movements?                                | <b>[05]</b> |
| <b>Q2.</b> | <b>a)</b> Explain GIFT City in detail.  | <b>[10]</b> |
|            | <b>b)</b> Explain the steps involved in the K-means clustering algorithm and how it works in partitioning data.                           | <b>[10]</b> |
| <b>Q3.</b> | <b>a)</b> What is the Wishart distribution and how is it related to covariance matrices?  | <b>[10]</b> |
|            | <b>b)</b> Explain Sharpe Ratio and show with example how Sharpe Ratio can be used to evaluate income statement growth.                    | <b>[10]</b> |
| <b>Q4.</b> | <b>a)</b> Describe key components of Capital Asset Pricing Model in detail.   | <b>[10]</b> |
|            | <b>b)</b> Compare between Stop Loss (SL), Trailing Stop Loss (TSL), and Take Profit (TP) orders in trading and explain each with example. | <b>[10]</b> |
| <b>Q5.</b> | <b>a)</b> Explain in detail visualizing covariance and precision matrices.  | <b>[10]</b> |
|            | <b>b)</b> What is the relationship between prior and posterior distributions in Bayesian analysis?  | <b>[10]</b> |
| <b>Q6.</b> | <b>a)</b> Explain concept of infallibility in financial and banking operation.  | <b>[10]</b> |
|            | <b>b)</b> What is an undirected graph and why is it used?   | <b>[10]</b> |
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