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Question Paper Code	14161
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**MBA - DEGREE EXAMINATIONS, NOV/DEC 2025**

Third Semester

**Master of Business Administration**

**24MBS303 - ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FOR DECISION MAKING**

Regulations - 2024

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

	<i>Marks</i>	<i>K- Level</i>	<i>CO</i>
1. Define Machine Learning and identify its primary objective in data-driven applications.	2	K1	CO1
2. Explain how Machine Learning differs from traditional programming with a simple example.	2	K2	CO1
3. Define probability theory and identify its role in machine learning model building.	2	K1	CO2
4. Explain the difference between discrete and continuous probability distributions with suitable examples.	2	K2	CO2
5. Define Bayesian Decision Theory and identify its importance in machine learning analysis.	2	K1	CO3
6. Explain the difference between Linear Regression and Logistic Regression in terms of their output prediction type.	2	K2	CO3
7. Define Artificial Intelligence and identify its primary objective in modern computing systems.	2	K1	CO4
8. Explain the concept of Gradient Descent and describe its role in AI model optimization.	2	K2	CO4
9. Define a Recurrent Neural Network (RNN) and identify one area where it is commonly applied.	2	K1	CO5
10. Explain how Time Series Forecasting uses AI models to predict business trends or stock prices.	2	K2	CO5

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

11. a) Illustrate the differences between Supervised, Unsupervised, and Reinforcement Learning using suitable examples from real-world business applications.	13	K2	CO1
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OR

b) Explain the evolution of ML and AI.	13	K2	CO1
12. a) Explain in detail the various types of probability distribution.	13	K5	CO2

OR

- b) Assess the concept of Bayesian Concept Learning to demonstrate how prior knowledge influences classification decisions in spam email detection. 13 K5 CO2
13. a) Analyze the process of Maximum Likelihood Estimation (MLE) in Linear Regression and discuss how it impacts the accuracy of predictive models. 13 K4 CO3

OR

- b) Examine what is linear regression and also highlight the types of the same with suitable examples. 13 K4 CO3
14. a) Analyze the functioning of Feed forward Neural Networks (FFN) and examine how back propagation improves learning efficiency. 13 K4 CO4

OR

- b) Compare the Divide and Conquer approach with traditional problem-solving methods in AI and analyze its application in real-world systems. 13 K4 CO4
15. a) Evaluate the effectiveness of RNN-based models in forecasting financial data and justify their suitability compared to traditional statistical models. 13 K5 CO5

OR

- b) Define Time Series Analysis. Explain the steps involved in Time Series Analysis with the parameters for fine tuning the model. 13 K5 CO5

**PART - C (1 × 15 = 15 Marks)**  
**(Compulsory)**

16. An engineering college plans to automate the attendance of the students hour-wise in their central database at the end of each hour without the involvement of the faculties in taking attendance. 15 K5 CO5

As a data scientist you are supposed to build a model and provide a solution for the management's problem.

**Questions:**

1. Inform the management what type of information / data is required and how are you going to obtain the data in real time.
2. As a specialist how you are proposing to use the data and find out the solution.
3. Creation of dashboard as mentioned above.

