



SNS College of Technology

(An Autonomous Institution)

Coimbatore - 35



DEPARTMENT OF MANAGEMENT STUDIES
23BAT615 – Artificial Intelligence for Managers
UNIT – III & Unboxing AI and its Applications

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Two Mark Question and Answer

- 1. Question: What is the primary objective of using linear regression in business analytics?**

Answer: The primary objective is to model the relationship between a dependent variable and one or more independent variables to make predictions or understand trends.

- 2. Question: How is the coefficient of determination (R^2) interpreted in linear regression analysis?**

Answer: R^2 represents the proportion of variance in the dependent variable that is predictable from the independent variables, indicating the goodness of fit of the model.

- 3. Question: Why is it important to check for multicollinearity in linear regression models?**

Answer: Multicollinearity can inflate the variances of the coefficient estimates and make the model unstable, leading to unreliable results.

- 4. Question: What is the main difference between logistic regression and linear regression?**

Answer: Logistic regression is used for binary classification problems where the dependent variable is categorical, whereas linear regression is used for predicting continuous outcomes.

- 5. Question: Explain the concept of the odds ratio in logistic regression.**

Answer: The odds ratio represents the change in odds of the dependent event occurring for a one-unit change in the independent variable, holding all other variables constant.

- 6. Question: Why is the logistic function (sigmoid function) used in logistic regression?**

Answer: The logistic function is used because it maps any real-valued number into a range between 0 and 1, suitable for predicting probabilities of binary outcomes.

7. Question: What is the purpose of using a decision tree in business decision-making?

Answer: Decision trees are used to visually and explicitly represent decisions and decision making, helping to evaluate potential outcomes and impacts for strategic planning.

8. Question: What is entropy in the context of decision trees?

Answer: Entropy measures the impurity or disorder of a set of data, and it is used to determine how a decision tree splits the data to reduce uncertainty.

9. Question: How does pruning help improve a decision tree model?

Answer: Pruning removes unnecessary branches from the tree that do not provide additional power to classify instances, thus reducing complexity and preventing overfitting.

10. Question: What advantage does a random forest model have over a single decision tree?

Answer: A random forest model reduces overfitting and improves accuracy by averaging multiple decision trees built on different subsets of the dataset.

11. Question: What is the role of bootstrapping in the random forest algorithm?

Answer: Bootstrapping involves sampling the data with replacement to create multiple subsets for training each individual decision tree in the forest.

12. Question: How does feature importance work in a random forest model?

Answer: Feature importance is calculated based on how much a particular feature decreases the impurity or increases the accuracy across all trees in the forest.

13. Question: What is the primary application of the KNN algorithm in business?

Answer: KNN is used for classification and regression tasks, such as customer segmentation, recommendation systems, and predictive maintenance.

14. Question: How is the 'k' value chosen in the KNN algorithm?

Answer: The 'k' value is typically chosen based on cross-validation to find the optimal balance between bias and variance for the specific dataset.

15. Question: What is the impact of feature scaling on the performance of KNN?

Answer: Feature scaling is crucial for KNN because it relies on distance metrics; unscaled features can lead to biased results due to differences in magnitude.

16. Question: What are the basic components of a neural network?

Answer: The basic components are input layers, hidden layers, and output layers, where each layer consists of nodes (neurons) connected with weights.

17. Question: Why is the backpropagation algorithm important in training neural networks?

Answer: Backpropagation calculates the gradient of the loss function with respect to each weight, allowing the network to adjust weights to minimize the error.

18. Question: How does deep learning differ from traditional machine learning?

Answer: Deep learning involves neural networks with many layers (deep networks) that can automatically learn hierarchical features from large datasets, whereas traditional machine learning relies on manual feature extraction.

19. Question: What is the purpose of using visualization techniques in deep learning?

Answer: Visualization techniques help to understand and interpret the inner workings of deep learning models, making it easier to diagnose issues and improve performance.

20. Question: What is tokenization in NLP, and why is it important?

Answer: Tokenization is the process of splitting text into individual words or phrases (tokens). It is essential for preparing text data for further processing and analysis.

21. Question: What is the goal of sentiment analysis in text analytics?

Answer: The goal is to determine the sentiment or emotional tone of text, such as classifying opinions as positive, negative, or neutral to understand customer attitudes.

22. Question: How can social media analytics benefit businesses?

Answer: Social media analytics helps businesses monitor brand reputation, understand customer preferences, and identify emerging trends for strategic decision-making.