

Code: 21P03601

SR21

SET-3

SRINIVASA INSTITUTE OF ENGINEERING AND TECHNOLOGY

UGC – Autonomous Institution

III B.Tech II Semester I MID Examinations, MAY – 2025

ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

MECH

Time : 20 Mins	Max. Marks: 20			Date: 01-05-2025
Roll No:	Sign of the Student:			Marks Obtained:
Name:	Sign of invigilator:			Sign of Valuator:
CO	CO 3	CO 4		Marks Obtained:
UNIT	III	IV		Total Marks:

1. Which method is commonly used for time-series forecasting?

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- A) Decision Trees
- B) ARIMA
- C) Naïve Bayes
- D) Support Vector Machines

2. Which of the following deep learning models is commonly used for sequence modeling?

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- A) Convolutional Neural Networks (CNNs)
- B) Recurrent Neural Networks (RNNs)
- C) Random Forest
- D) K-Means Clustering

3. What is a Deep Boltzmann Machine (DBM) primarily used for?

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- A) Supervised learning tasks
- B) Feature learning and representation learning
- C) Clustering
- D) Decision Trees

4. What is the main purpose of autoencoders?

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- A) To classify data
- B) To reconstruct input data by learning compressed representations
- C) To cluster data
- D) To generate decision trees

5. Which component is used in autoencoders to compress data into a lower-dimensional form? []

- A) Decoder
- B) Encoder
- C) Activation Function
- D) Loss Function

6. How do deep generative models differ from traditional machine learning models? []

- A) They rely solely on labeled data
- B) They generate new data similar to the training data
- C) They only perform classification tasks
- D) They require supervised learning

7. Which of the following is a deep generative model? []

- A) Logistic Regression
- B) Variational Autoencoder (VAE)
- C) Random Forest
- D) Decision Tree

8. What is the primary application of deep networks in Natural Language Processing (NLP)? []

- A) Image classification
- B) Sentiment analysis and machine translation
- C) Clustering
- D) Time-series forecasting

9. In deep learning, which of the following is an application of Convolutional Neural Networks (CNNs)? []

- A) Time-series forecasting
- B) Image recognition and object detection
- C) Sentiment analysis
- D) Dimensionality reduction

10. What is a major advantage of using deep learning in healthcare applications? []

- A) It reduces the need for domain expertise
- B) It automatically learns features from medical images and data
- C) It replaces all doctors
- D) It only works with structured data

11. What is the goal of clustering in machine learning? []

- A) To classify data based on prior labels
- B) To partition data into meaningful groups based on similarity
- C) To maximize classification accuracy
- D) To remove outliers

12. Which of the following is NOT a clustering algorithm? []

- A) K-Means
- B) Hierarchical Clustering
- C) Decision Trees
- D) DBSCAN

13. What is the main drawback of K-Means clustering? []

- A) It is very slow
- B) It is sensitive to the choice of initial cluster centers
- C) It requires labeled data
- D) It can only cluster numerical data

14. In K-Means clustering, what does the 'K' represent? []

- A) Number of iterations
- B) Number of clusters
- C) Number of dimensions in data
- D) Number of training examples

15. What is dimensionality reduction used for in machine learning? []

- A) To increase the number of features
- B) To improve model interpretability and reduce computation
- C) To generate more training data
- D) To remove important information from data

16. Which of the following is NOT a dimensionality reduction technique? []

- A) Principal Component Analysis (PCA)
- B) t-SNE
- C) K-Means Clustering
- D) Singular Value Decomposition (SVD)

17. What does PCA aim to do? []

- A) Find the best linear separation between two classes
- B) Transform data into a new set of orthogonal variables (principal components)
- C) Reduce data size by removing missing values
- D) Increase the number of features

18. What is the main limitation of PCA? []

- A) It works only for classification problems
- B) It assumes linear relationships in the data
- C) It requires a very large dataset
- D) It cannot be used for dimensionality reduction

19. Which of the following is true about kernel PCA? []

- A) It is an extension of PCA that allows for non-linear transformations
- B) It requires labeled data
- C) It is a supervised learning method
- D) It is not useful for image processing

20. In which scenario would you use Kernel PCA instead of standard PCA? []

- A) When data has a non-linear structure
- B) When there are too many missing values
- C) When the dataset is very large
- D) When labels are available for classification