TEE2033CS - Elective Paper-II : Machine Learning

P. Pages : 1   **GUG/S/23/13825**

Time : Three Hours   *2562*   Max. Marks : 80

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Notes :   1.   All questions are compulsory.
          2.   All questions carry equal marks.
          3.   Due credit will be given to neatness and adequate dimensions.
          4.   Assume suitable data wherever necessary.

1.	a)	Define Machine learning? Briefly explain the types of learning.	**8**
	b)	Differentiate between supervised and unsupervised machine learning.	**8**

OR

2.	a)	What are the Applications of Supervised Machine Learning in Modern Businesses?	**8**
	b)	What is Bias and Variance in a Machine Learning Model?	**8**

3.	a)	Explain KNN Algorithm with suitable example.	**8**
	b)	What is decision Tree? Explain with suitable example.	**8**

OR

4.	a)	Explain SVM Algorithm in Detail.	**8**
	b)	What is a Neural Network? Explain with suitable diagram.	**8**

5.	a)	What is Hard Margin and Soft Margin in SVM. Explain with example.	**8**
	b)	What is Regularization? What kind of problems does regularization solve?	**8**

OR

6.	a)	Describe the significance of Kernel functions in SVM. List any two kernel functions.	**8**
	b)	Explain any two regularization techniques in detail.	**8**

7.	a)	What is Clustering? Explain K-means clustering with suitable example.	**8**
	b)	Compare K-means clustering with Hierarchical Clustering Techniques.	**8**

OR

8.	a)	What is a Hierarchical Clustering? What are different types of Hierarchical Clustering? Explain any one with diagram.	**8**
	b)	Explain any four applications of Clustering with example.	**8**

9.	a)	Explain PCA and its process with their applications.	**8**
	b)	Compare Feature Extraction and Feature Selection techniques.	**8**

OR

10.	a)	Explain how dimensionality can be reduced using subset selection procedure.	**8**
	b)	Explain feature selection and feature extraction method for dimensionality reduction.	**8**

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