A   **Reg. No. :**

Answer All Questions

PART A - (10 x 1 = 10 Marks)

1. Which of the following machine learning techniques helps in detecting the outliers in data?.   CO1-U

   (a) Classification   (b) Clustering

   (c) Anomaly detection   (d) All of the above

2. Machine learning is a subset of   CO1-U

   (a) Artificial intelligence   (b) Deep learning

   (c) Data learning   (d) None of the above

3. Among the following options identify the one which is false regarding regression.   CO1-U

   (a) It is used for the prediction   (b) It is used for interpretation

   (c) It relates inputs to outputs   (d) It discovers casual relationships

4. Analysis of ML algorithm needs   CO1-U

   (a) Statistical learning theory   (b) Computational learning theory

   (c) Both (a) and (b)   (d) None of the above

5. The total types of the layer in radial basis function neural networks is _____   CO1-U

   (a) 1   (b) 2   (c) 3   (d) 4

6. Machine Learning is a field of AI consisting of learning algorithms that   CO1-U

    (a) At executing some task   (b) Over time with experience

    (c) Improve their performance   (d) All of the above

7. Identify the model which is trained with data in only a single batch.   CO1-U

    (a) online learning   (b) batch learning   (c) both (a) and (b)   (d) none of the above

8. Among the following identification which one is the dimensionality   CO1-U
reduction

    (a) performance   (b) entropy   (c) stochastics   (d) collinearity

9. What does K stand for in K mean algorithm?   CO1-U

    (a) Number of clusters   (b) Number of data

    (c) Number of attributes   (d) Number of iterations

10. Among the following option identify the one which is used to create the most   CO1-U
common graph types.

    (a) plot   (b) quickplot   (c) qplot   (d) All of the above

<center>PART – B (5 x 2= 10Marks)</center>

11. What do you understand by the Confusion Matrix?   CO1-U

12. Considering a Long List of Machine Learning Algorithms, given a Data Set,   CO2-App
How Do You Decide Which One to Use?

13. What is an ANN in ML?   CO1-U

14. Explain How a System Can Play a Game of Chess Using Reinforcement   CO1-U
Learning.

15. What are the 3 parts of any optimization problem?   CO1-U

<center>PART – C (5 x 16= 80 Marks)</center>

16. (a)   Explain machine learning and its types. What is the role of data in   CO1-U   (16)
machine learning?

<center>Or</center>

    (b)   Explain the difference between parametric and non-parametric   CO1-U   (16)
models in terms of model representation?

<center>2</center>

<div align="right">**U5E03**</div>

17. (a) Suppose we are building a classifier that says whether a text is about sports or not. Our training data has 5 sentences: CO2-App   (16)

Text	Tag
"A great game"	Sports
"The election was over"	Not sports
"Very clean match"	Sports
"A clean but forgettable game"	Sports
"It was a close election"	Not sports

Now, which tag does the sentence "A very close game" belong to? Explain how Naive Bayes can be employed to predict.

Or

(b) A training data set of weather and the corresponding target variable 'Play' (suggesting possibilities of playing).   CO2-App   (16)

	Outlook	Play		Outlook	Play
0	Rainy	Yes	7	Overcast	Yes
1	Sunny	Yes	8	Rainy	No
2	Overcast	Yes	9	Sunny	No
3	Overcast	Yes	10	Sunny	Yes
4	Sunny	No	11	Rainy	No
5	Rainy	Yes	12	Overcast	Yes
6	Sunny	Yes	13	Overcast	Yes

Solve if the weather is sunny, then the Player should play or not use Naive Bayes to predict.

18. (a) What are some limitations and challenges associated with training neural networks?   CO1-U   (16)

Or

(b) What is a neural network, and how does it work in simple terms?   CO1-U   (16)

19. (a) Compare supervised and Unsupervised model and explain which model is best by using any of your own dataset. Analyze   CO2-App   (16)

Or

U5E03

(b) Compare Support Vector Machine with linear regression and explain in detail about which technique is best using your own dataset. Analyze   CO2-App   (16)

20. (a) Apply the graphical model technique in machine learning for Gmail account process   CO1-U   (16)

Or

(b) Apply the auto encoder design process for our SIT Exam Cell.   CO1-U   (16)

U5E03