



**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2023**

Semester : Semester III - 2021

Course Code : CSE3001

Course Name : Sem III - CSE3001 - Artificial Intelligence and Machine Learning

Program : B.Tech. CAI/CEI/CST

Date : 17-JAN-2023

Time : 1.00PM - 4.00PM

Max Marks : 100

Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.

PART A

ANSWER ALL THE TEN QUESTIONS

10 X 2 = 20M

1. How simplex agent is different from goal-based agents. Brief. (CO1) [Knowledge]
2. Define the following Terms i) Artificial Intelligence ii) Agent iii) Percept Sequence (CO1) [Knowledge]
3. Differentiate classification and regression with suitable examples. (CO2) [Knowledge]
4. What do you understand by the Confusion Matrix? (CO2) [Knowledge]
5. What are RMSE and MSE? Which one is more better for evaluation? (CO2) [Knowledge]
6. What do you understand by class imbalance problem. Brief. (CO3) [Knowledge]
7. If 1 class has 90 percent sample and other class has 10 percent sample in a dataset. Whether this is a good representation. If yes then why. (CO3) [Knowledge]
8. Explain precision and recall formula in classification. (CO3) [Knowledge]
9. Write down any two unsupervised techniques and their applications. (CO4) [Knowledge]
10. In Collaborative filtering what do you understand by similarity score? (CO4) [Knowledge]

PART B

ANSWER ALL THE FIVE QUESTIONS

5 X 10 = 50M

- 11. Explain Utility and model-based agents with neat diagrams. (CO1) [Comprehension]
- 12. Explain FP, TP, FN, and TN pertaining to the Confusion Matrix. (CO2) [Comprehension]
- 13. Why Naive Bayes Classifier is called Naive. Explain with an example. (CO3) [Comprehension]
- 14. What do you understand by Bootstrapped database? explain Cross validation. (CO3) [Comprehension]
- 15. What K denotes in K Means Clustering. What is Euclidean distance? Why it is used. (CO4) [Comprehension]

PART C

ANSWER ALL THE TWO QUESTIONS

2 X 15 = 30M

- 16. Explain the naïve Bayes algorithm in detail. Using the same naïve Bayes algorithm to solve the below-given problem.

If the weather is overcast, the player should play cricket or not?

Weather	Play cricket
Rainy	Yes
Sunny	Yes
Overcast	Yes
Overcast	Yes
Sunny	No
Rainy	Yes
Sunny	Yes
Overcast	Yes
Rainy	No
Sunny	No
Sunny	Yes
Rainy	No
Overcast	Yes

(CO3) [Application]

- 17. Explain association rule mining with respect to real-time examples. Find the confidence and support for the below-given data for strong association with a min support count of 2 and min confidence of 60.

TID	Items
1	Bread, Milk, Diapers
2	Bread, Diapers, Beer, Eggs
3	Eggs, Milk, Milk, Beer, Bread
4	Diaper, Beer, Bread, Milk
5	Bread, Beer, Milk, Eggs, Diapers

(CO4) [Application]