



MCA (Artificial Intelligence and Data Science) I () - II (Main/Back) End Semester Examination,
23MCDCCA2102: Machine Learning

Time: 3 Hours

Total Marks: 60

Min. Passing Marks: 21/24/27

Question Paper ID: 001104

Instructions: Attempt all five questions. There is an internal choice either (a or b) in Q1 to Q5. Marks of each question or its parts are indicated against each question/part. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Bloom Level(BL): 1-Remembering, 2-Understanding, 3-Appling, 4-Analysing, 5-Evaluating, 6-Creating

Use of following supporting material is permitted during examination for this subject: Nil

- Q1. (a)** (i) Define Machine Learning. How does machine learning works? Write the steps of machine learning work. **(6 Marks)** **Marks BL CO**
12 1 1
(ii) Explain un-supervised machine learning. **(6 Marks)**
(OR)
- (b)** (i) Define Reinforcement Learning (RL). Write down the approach to implement reinforcement learning. **(6 Marks)**
(ii) Over fitting and Under fitting in Machine Learning. **(6 Marks)**
- Q2. (a)** Define Regression in machine learning. Differences between Linear and Logistic Regression. **(12 Marks)** **Marks BL CO**
12 2 2
(OR)
- (b)** What is a Regression? Explain understanding and uses of regression. Also write simple and multi-regression equation. **(12 Marks)**
- Q3. (a)** (i) What is a Decision Tree? Write down the decision tree decision algorithm and its uses. **(6 Marks)** **Marks BL CO**
12 4 3
(ii) Elaborate classification in machine learning? **(6 Marks)**
(OR)
- (b)** (i) Explain Logistic Regression. Write the types of logistic regression. **(6 Marks)**
(ii) Compare K-means and KNN Algorithms. **(6 Marks)**
- Q4. (a)** Defining clustering in machine learning and it is needed? Write down types of clustering algorithm. **(12 Marks)** **Marks BL CO**
12 3 4
(OR)
- (b)** Explain Fuzzy Clustering. Write the Applications in several fields of Fuzzy clustering. **(12 Marks)**
- Q5. (a)** (i) What are performance metrics in Machine Learning. What types of Performance Metrics are used classification model. **(6 Marks)** **Marks BL CO**
12 2 5
(ii) Define Accuracy Metrics. When to use and not use Accuracy Metrics? **(6 Marks)**
(OR)
- (b)** (i) What if confusion metrics, explain with example. Why do we need it. **(6 Marks)**
(ii) Explain the Precision and Recall of Sensitivity with their respective formulae. **(6 Marks)**

End of Question Paper