



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD)
Re-accredited with 'A++' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment Test I – August 2025
III SEMESTER

Class : II B.Voc.

Major: Artificial Intelligence and Machine Learning

Time: 2 hours

Maximum Marks: 60

23VAIC10 Data Mining and Analytics

Course Outcomes:

1. Understand the basic concepts of Data Analytics
2. Analyse data using Classification, clustering and Association mining.
3. Apply Random Forest, SVM and KNN to data
4. Be familiar with the Data Exploration and Manipulation Techniques.
5. Have Hands on the various basic and advanced Visualization Techniques.

Part-A

6x1=6

Choose the correct answer

1. Which of the following is a common step in data preprocessing?
a. Cleaning b. Sorting c. Storing d. Transferring CO1K2
2. Which type of learning involves finding patterns without labeled data?
a. Supervised b. Reinforcement c. Unsupervised d. Semi-supervised CO1K1
3. Which of these is a supervised classification technique?
a. K-means b. PCA c. Naive Bayes d. Apriori CO2K1
4. Which technique is primarily used in Association Rule Analysis?
a. Clustering b. Apriori c. Regression d. Classification CO2K2
5. Random Forest is an example of which type of learning method?
a. Regression b. Classification c. Ensemble d. Clustering CO3K2
6. Which of the following kernels is NOT typically used in SVM?
a. Linear b. Polynomial c. Exponential d. Radial CO3K1

Part- B

3x6=18

Answer ALL Questions

Each answer should not exceed 400 words or two pages

- 7.a. Distinguish between analysis and reporting. CO1K3
(or)
- 7.b. Write a short note on supervised and unsupervised learning. CO1K2
- 8.a. Describe the concept of association rules analysis. CO2K2
(or)
- 8.b. Explain K-means clustering with examples. CO2K3
- 9.a. List the steps to build a random forest. CO3K3
(or)
- 9.b. Outline the advantages and disadvantages of a support vector machine. CO3K2

Part-C

3x12=36

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 10.a. Outline the analytic processes and tools. CO1K2
(or)
- 10.b. Explain about data preprocessing with examples. CO1K3
- 11.a. Provide a detailed explanation of classification techniques with examples using R. CO2K2
(or)
- 11.b. Explain K-medoids clustering and density-based clustering in detail. CO2K3
- 12.a. Describe how SVM works, including the concept of support vectors, hyperplanes. CO3K4
(or)
- 12.b. Define random forest and illustrate its working with suitable examples. CO3K3

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