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 (now MoE)
Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment Test II – October 2025
III SEMESTER

Class : II B.Voc. **Time: 2 hours**
Major: Artificial Intelligence and Machine Learning **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 metric is most commonly used to measure distance in KNN? CO3K2
   a. Cosine b. Euclidean c. Hamming d. Jaccard

2. What is the name of the boundary that SVM tries to create between classes? CO3K1
   a. Margin b. Kernel c. Hyperplane d. Vector

3. Which of the following is a common method to handle missing data? CO4K1
   a. Normalization b. Encoding c. Imputation d. Clustering

4. Which function is used to transform data from wide to long format? CO4K2
   a. gather() b. melt() c. spread() d. dcast()

5. Which function is used to create a basic pie chart in R? CO5K2
   a. barplot() b. pie() c. plot() d. hist()

6. What do colors represent in a heatmap? CO5K1
   a. Data labels b. Data categories c. Data values d. Data positions

Part- B **3x6=18**

Answer ALL Questions

Each answer should not exceed 400 words or two pages

7.a. Enumerate the advantages and disadvantages of support vector machines. CO3K3

(or)

7.b. Explain the K value and its impact on the K-Nearest Neighbours algorithm. CO3K2

8.a. Discuss import and export of data with examples using R. CO4K2

(or)

8.b. Illustrate data reshaping through melting and casting using R. CO4K3

9.a. Illustrate tree maps with an example. CO5K3

(or)

9.b. Describe a pie chart with an example. CO5K2

Part-C **3x12=36**

Answer ALL questions

Each answer should not exceed 800 words or four pages

10.a. Describe the working of Support vector machines and the role of the kernel. CO3K2

(or)

10.b. Illustrate K- Nearest Neighbours algorithm with an example. CO3K3

11.a. Explain about the special functions across data elements using R. CO4K2

(or)

11.b. Explain about missing data management with an example using R. CO4K3

12.a. Elaborate on scatter plot, heat maps and dot chart. CO5K4

(or)

12.b. Discuss about box plot, line chart and bar chart. CO5K3

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