

TE Sem IV 'K' scheme Summer 2025

(3 Hours)

[80 Marks]

Cmpn

- Note (1). Question No.1 is compulsory.
 (2). Out of the remaining attempt any three.
 (3). Assume and mention suitable data wherever required.

Q.1 Solve any Four of the following. (5 marks each)**20**

- A. What are the basic building blocks of Data Warehouse?
 B. What are the major issues in Data Mining?
 C. Differentiate supervised and unsupervised learning.
 D. Explain k-medoids algorithm.
 E. Explain Market Basket analysis with an example.
 F. Explain web-usage mining in detail.

Q.2 A) Explain different steps involved in data preprocessing.**10**

- B) The college wants to record the marks for the courses completed by the students using the dimensions: a) Course, b) student, c) time and a measure aggregate marks.

Create a cube and describe following operations:

- i) Roll up, ii) Drill down, iii) Slice and iv) Dice.

10

Q.3 A) A database has five transactions. Let minimum support count = 2 and minimum confidence = 60%. Find all frequent itemsets using Apriori algorithm. Also list strong association rules.

10

T ID	Items
100	1, 3, 4
200	2, 3, 5
300	1, 2, 3, 5
400	2, 5
500	1, 3, 5

B) Explain the types of attributes and data visualization

10

14

Q.4 A) Explain K-means algorithm with diagram. Use k-means algorithm to create 3-clusters for given set of values : {2, 3, 6, 8, 9, 12, 15, 18, 22} 10

B) Explain ETL process in detail. 10

Q.5 A) What is web structure mining? Describe page ranking technique with the help of example. 10

B) Demonstrate Multidimensional and Multilevel Association Rule Mining with suitable example. 10

Q.6 A) What is classification? Explain any one classification algorithm with example. 10

B) Write short on the following. (5 marks each) 10

i) FP Tree

ii) Fact Constellation Schema