

[5254]-667

B.E. (Computer Engineering)

DATA MINING TECHNIQUES AND APPLICATIONS

(2012 Pattern) (Semester - I) (Elective - I)

Time : 2½ Hours]

[Max. Marks : 70]

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume Suitable data if necessary

- Q1) a) What are missing values? Explain methods to handle missing values. [6]
 b) Write Apriori Algorithm and explain it with suitable example. [6]
 c) What are the different metrics for performance evaluation? Explain any four. [8]

OR

- Q2) a) Explain Bayes theorem and Naive Bayes classification algorithm. [8]
 b) Use the two methods below to normalize the following group of data: [8]
 200, 300, 400, 600, 1000
 a) min-max normalization by setting min = 0 and max = 1
 b) z-score normalization.
 c) Explain applications of Market basket analysis. [4]

- Q3) a) Explain CLARA(Clustering Large Applications), as. extension of PAM(Partitioning Around Medoids) algorithms for handling large data sets. [6]
 b) Explain AGNES and DIANA Hierarchical Clustering with example and diagram. [8]
 c) What is meant by cluster analysis? [3]

P.T.O.

Nov 17

OR

- Q4) a) Using K-Means Clustering, Cluster the following data into 2 cluster. [8]
 {4,6,12,14,5,22,32,13,27}, Explain each step with diagram
 b) Explain K-Medoids clustering algorithm with example. [6]
 c) Write equations for min, max, mean and average distance, to find out inter cluster distance. [3]
- Q5) a) Explain following terms: [9]
 i) Term Frequency
 ii) Inverse Document Frequency
 iii) Bag of Words
- b) What is web crawler? Explain working of web crawlers. [6]
 c) What is document ranking? [2]

OR

- Q6) a) Differentiate between Web content mining and Web usage mining. [6]
 b) Which are dimensionality reduction techniques in text mining? List them and explain any one of them. [8]
 c) What is feature vector? [3]
- Q7) a) Explain Intelligent agent and environment, learning agents, rewards, adaptive learning in reinforcement learning. [8]
 b) Write a note on multi-perspective learning and Holistic Learning. [8]

OR

- Q8) a) Draw and explain diagram for systematic machine learning framework. [8]
 b) Write a note on Advanced techniques for big data mining. [8]

○○○

[5254]-667

2