

11. (a) Explain the method for mining sequence patterns in Biological Databases. 6
 (b) How are we able to achieve Social Network Analysis and Multirelational Data Mining ? 7

OR

12. (a) Write short notes on : (any **TWO**) :
 (i) Graph Mining
 (ii) Data Stream Mining
 (iii) Task and challenges in link mining. 8
 (b) What do you mean by Time Series and Sequence Data ? Explain with example. 5

**Faculty of Engineering & Technology
 Seventh Semester B.E. (C.S.E.) (C.B.S.) Examination
 DATA WAREHOUSING & MINING**

Time—Three Hours] [Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Solve Question No. **1 OR** Question No. **2**.
- (3) Solve Question No. **3 OR** Question No. **4**.
- (4) Solve Question No. **5 OR** Question No. **6**.
- (5) Solve Question No. **7 OR** Question No. **8**.
- (6) Solve Question No. **9 OR** Question No. **10**.
- (7) Solve Question No. **11 OR** Question No. **12**.
- (8) Due credit will be given to neatness and adequate dimensions.
- (9) Assume suitable data wherever necessary.
- (10) Use of non programmable calculator is permitted.

1. (a) Give classification of Data Mining Systems. 5
 (b) Describe why concept hierarchies are useful in Data Mining. 4
 (c) Give the application of Data Mining. 5

OR

2. (a) What is the need of Data Preprocessing ? Also explain different steps involved in Data Preprocessing. 8
- (b) Discuss the major issues in data mining. 6
3. (a) Explain three-tier architecture of data warehouse in detail. 7
- (b) Explain various OLAP operations in the multidimensional Data Model. 6

OR

4. (a) Write the difference between OLTP and OLAP. 6
- (b) Discuss possible design approaches used in the design process of a data warehouse. Also write the general steps in data warehouse design process. 7
5. (a) What do you mean by mining frequent patterns, associations and correlations ? Elaborate by giving example. 6
- (b) Write short note on Constraint-Based Association Mining. 7

OR

6. What are the different methods available for Efficient and scalable frequent item set mining ? Explain any one method along with example in detail. 13

7. (a) Write short notes on :
- (i) SVM (Support Vector Machine) 8
- (ii) Bayesian classification. 8
- (b) How do you evaluate the accuracy of a classifier in classification ? Explain. 6

OR

8. (a) Explain different issues regarding classification and prediction. 7
- (b) Differentiate classification by Back propagation and classification by Decision Tree Induction. 7
9. (a) Discuss typical requirements of clustering in data mining. 5
- (b) What is Clustering ? Briefly describe the approach of clustering in partitioning method. 3
- (c) What is Outlier ? Why outlier mining is important ? 5

OR

10. (a) Write and explain DBSCANLA Density Based Clustering method based on connected regions with sufficiently high density. 7
- (b) Explain Grid-based clustering approach by considering STING (Statistical Information Grid). 6