



- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Assume suitable data whenever necessary.
  10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain three tier architecture of data warehouse. **6**  
b) What is OLAP? Define following with example : **7**  
i) ROLAP      ii) MOLAP      iii) HOLAP  
**OR**
2. Assume RTMNU in the centralized system is given to you and six branches named as CSE, CT, IT, ECE, ETRX and MECH are the items of that system. The measuring factors are no. of students passed and no. of students placed. Design star Schema, snowflake schema & fact constellation schema of the above said system. (Assume suitable data wherever necessary) **13**
3. a) What are major components of a typical data mining? Draw architecture of data mining system and explain it. **7**  
b) What is the need of Data Preprocessing? Explain Data Cleaning and Data Transformation in short. **7**  
**OR**
4. a) Address all the issues in data mining regarding data mining methodology and user interaction. **7**  
b) Describe the steps involved in data mining when viewed as a process of knowledge discovery. **7**
5. a) Discuss typical requirements of clustering in datamining. **5**  
b) Explain DBSCANLA Density Based clustering method which is based on connected Regions with sufficiently High density. **8**  
**OR**
6. a) What do you mean by hierarchical clustering approach? Explain agglomerative and divisive hierarchical clustering. **7**  
b) Explain Grid – based clustering approach by considering STING (Statistical Information Grid) **6**

7. a) What do you mean by mining frequent patterns, Associations & correlations? Elaborate by giving examples. 6
- b) Explain Apriori Algorithm in detail. 8
- OR**
8. a) How FP growth algorithm works? Explain. 7
- b) Explain how efficiency of Apriori algorithm can be improved? 7
9. a) Explain Web Mining in detail. 6
- b) Describe various Graph properties of Web. 7
- OR**
10. a) How to access accuracy of text retrieval in text mining system? 5
- b) Explain Spatial Data Mining in detail. 8
11. a) Explain the concept of Big Data Problem. 6
- b) What are the available various Big Data Managements technologies? Explain in detail. 7
- OR**
12. a) Write about various practical applications of next generation data mining. 5
- b) Write short note on : 8
- i) Big Data Technology & Tools.
- ii) Map Reduce Paradigm.

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