



- 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.

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|----|----|---|---|
| 1. | a) | Explain three tier architecture of data warehouse with neat diagram. | 7 |
| | b) | What do you mean by strategic Information Explain the factor that escalated the need for strategic information. | 6 |

OR

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|----|-----|---|---|
| 2. | a) | Explain life cycle of Data Ware House with neat sketch. | 7 |
| | b) | Differentiate between. | 6 |
| | i) | Data Ware House and Data Mart. | |
| | ii) | Operational DB system and Decision support system. | |

3. a) Summarize the data preprocessing steps in brief. 7
- b) What is data reduction? Explain different methods of data reduction. 6

OR

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| 4. | a) | Explain MIN-MAX normalization and Z-score normalization. | 6 |
| | b) | What is Data cleaning? Explain different methods of Data cleaning. | 7 |
| 5. | a) | What is OLAP? Discuss basic operations of OLAP with example. | 8 |
| | b) | Define the following. | 6 |
| | i) | ROLAP | |
| | ii) | MOLAP | |
| | iii) | HOLAP | |

OR

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|-----------|----|--|----------|
| 6. | a) | Differentiate between OLTP and OLAP. | 6 |
| | b) | Describe STAR and SNOWFLAKE scheme with example. | 8 |
| 7. | a) | Draw and explain Knowledge Discovery process. | 8 |
| | b) | What are the various issues in Data mining. | 6 |

OR

8. a) Describe the classification of Data mining systems. 8
b) Explain the application of Data Mining in.
i) Market Research.
ii) Healthcare Industry. 6

9. a) Explain how frequent Itemsets are generated using A priori Algorithm. 7
b) Define following Terms. 6
i) Frequent Itemset.
ii) Closed Itemset.
iii) Association Rules.

OR

10. a) Explain market Basket Analysis in Detail. 7
b) Explain How support and confidence is used to find out Association rules. 6
11. a) Define Big Data. State its challenges. 5
b) Describe the architectural component of Hadoop ecosystem. 8

OR

12. a) Draw and explain map reduction technique with Example. 10
b) Write a note on important factors of BI. 3
