

22621

23124

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.

**Marks**

**1. Attempt any FIVE of the following :**

**10**

- (a) Define Data warehouse.
- (b) Define Data cube.
- (c) Define Data cleaning and Data pre-processing.
- (d) Define Frequent Item set.
- (e) Explain data mining.
- (f) Enlist advantages of Bitmap indexing (any two).
- (g) Define ROLAP.

**2. Attempt any THREE of the following :**

**12**

- (a) Explain Market Basket analysis with suitable example.
- (b) Differentiate between Data Warehouse & Data Mart.
- (c) Explain Data warehouse design process.
- (d) Distinguish between OLTP & OLAP.



**3. Attempt any THREE of the following : 12**

- (a) Differentiate between star schema and snowflake schema.
- (b) Explain Join indexing in OLAP.
- (c) Explain ETL process.
- (d) Explain Data mining with its applications.

**4. Attempt any THREE of the following : 12**

- (a) Explain KDD process.
- (b) Explain Apriori algorithm.
- (c) Explain Meta Data repository.
- (d) Explain Data warehouse implementation.

**5. Attempt any TWO of the following : 12**

- (a) Explain different OLAP operations.
- (b) Draw and explain architecture of ROLAP and HOLAP.
- (c) Given the following data, apply the Apriori algorithm. Min support = 50% in Database D.

TID	Items
100	1 3 4
200	2 3 5
300	1 2 3 5
400	2 5

**6. Attempt any TWO of the following : 12**

- (a) Explain Data cleaning process in detail.
  - (b) Explain clustering & also explain the requirements for cluster analysis.
  - (c) Explain any 3 attribute types used in data mining process.
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