

Con. 3196-11.

(REVISED COURSE)

(3 Hours)

[Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions out of remaining **six** questions.

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| 1. (a) | Explain the following terms :- | 5 |
| | (i) Inheritance, (ii) Specialization. | |
| (b) | Explain Replication in Distributed Databases. | 5 |
| (c) | Compare Data Warehouse and Data Mart. | 5 |
| (d) | Explain BCNF with suitable example. | 5 |
| 2. (a) | Explain concept of referential integrity with an example. | 10 |
| (b) | Explain with proper example nested relation in ORDBMS. | 10 |
| 3. (a) | Explain security and authorization in SQL. | 10 |
| (b) | Explain design and implementation issues in mobile databases. | 10 |
| 4. (a) | Describe the event-condition-action model for triggers. Why triggers are required ? | 10 |
| (b) | Suppose, that we decompose the schema $R = (A, B, C, D, E)$ into | 10 |
| | (A, B, C) | |
| | (A, D, E) | |

Show that this decomposition is a lossless-join decomposition if the following set F of functional dependencies holds :-

- $A \rightarrow BC$
 $CD \rightarrow E$
 $B \rightarrow D$
 $E \rightarrow A$

5. (a) What are the main architectures used for building parallel databases ? Give 10 advantages and disadvantages of each.
- (b) Explain the following concepts with examples : 10
- (i) Object Identity
 - (ii) Type Constructor.
6. (a) All electronics company have sales department sales consider three dimensions 10 namely :-
- (i) Time (ii) Product (iii) Store.
- The schema contains a central fact table sales with two measures :-
- (i) dollars-sold and (ii) units-sold.
- Design star schema and snowflake schema.
- (b) Define data warehouse. Explain the architecture of data warehouse with 10 suitable block diagram.
7. Write short notes on (any two) :- 20
- (a) Spatial Databases
 - (b) OLAP Servers
 - (c) Vertical and Horizontal Fragmentation in Distributed Databases.
