

22321

23242

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.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: **10****
- State any four characteristics of Database:
 - Define:-
 - Domain
 - Attribute
 - Define Entity. Give it's example.
 - Write syntax for 'create table'.
 - Compare Data and information. (Any 2 points)
 - Define:-
 - Instance
 - Schema
 - List types of Normalization.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Explain disadvantages of file processing system in respect to
 - i) Data Redundancy
 - ii) Data Isolation
 - iii) Integrity problem
 - iv) Atomicity problem.
 - b) Describe Distributed database system.
 - c) Explain specialization with example.
 - d) Describe data abstraction with diagram.
- 3. Attempt any THREE of the following: 12**
- a) Explain entity integrity constraint with example.
 - b) State and explain 3 NF with example.
 - c) Explain types of attributes with example.
 - d) Differentiate between Hierarchical Database model and Relational Database model.
- 4. Attempt any THREE of the following: 12**
- a) Explain functional dependency with example.
 - b) Explain client - server Database system.
 - c) Explain Architecture of Database.
 - d) Explain any four codd's rules of RDBMS.
 - e) Explain advantages and disadvantages of parallel Database system.

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

- a) Consider following relation student (stud-id, name, class, total marks, percentage, grade) convert above relation in 2NF and 3 NF.
- b) Draw E-R diagram for Hospital management system. Identify entities and relationship among them.
- c) Consider given relation R with A, B, C, D, E attributes.
you have been given following dependencies,
 $A \rightarrow B$, $BC \rightarrow E$, $DE \rightarrow A$
 - i) List all keys for R
 - ii) In what normalized form R is? Justify the answer.

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

- a) Consider 'bank' database with (bank-id, bank-name, address, contact-no) details. Write procedure to manipulate given database by adding, updating and deleting records.
 - b) Draw enhanced E-R diagram for college management system. consider following entities :-
 - i) Student
 - ii) Department
 - iii) Courses
 - iv) Staff.
 - c) Consider following schemas customer (cust-id, name, address, Acc-no) Account (Acc-no, acc-type, balance)
Draw and explain parent-child relationship for above schemas and find out Foreign key with justification.
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