

2016

Time : 3 hours

Full Marks: 70

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from **all** the Groups as directed.

Group – A**(Compulsory)**

1. (A) Write True or False of the following statements: 1 x 10 = 10
 - a) A Data Definition Language (DDL) is used to define the database conceptual schema.
 - b) A chronological execution sequence of a transaction is called a Atomicity.
 - c) ER Model is based on Entities and their attributes and Relationships among entities.
 - d) Boyce-Codd Normal Form (BCNF) is an extension of Second Normal Form.
 - e) A database has data and relationships.
 - f) DBMS follows the concepts of Atomicity, Constant, Integer and Durability (normally shortened as ACID).
 - g) **NATURAL JOIN** is denoted by +.

- h) If attributes A and B determine attribute C, then it is also true that C is a determinant.
- i) A tuple is a column of a table.
- j) File server is the necessary items for client/server.
- (B) Fill in the blanks: 1x5 = 5
- a) _____ is a method to remove all these anomalies and bring the database to a consistent state.
- b) Hybrid OLAP is a combination of both _____ and _____.
- c) Each row has one or more attributes, known as _____ key.
- d) The primary key is selected from _____ key.
- e) Three-tier architecture includes A _____ layer and two _____ layers.

Group – B

2. Answer any **five** questions of the following: 4x5=20
- a) Draw a ER diagram of Company database.
- b) What is the architecture of client server system?
- c) What is aggregation and association? Explain with an example.
- d) What are unary relational operations?
- e) What is ACID property?
- f) Define OLAP, ROLAP, MOLAP and DSS.
- g) What are DDL commands? Explain it with example.

Group – C

(Long-answer Type Questions)

Answer any **five** questions of the following:

7x5=35

1. What is three-schema architecture and data independence? Explain.
2. What is the advantage of using the DBMS Approach?
3. What is normalization? Explain.
4. Draw the state diagram and discuss the typical states that a transaction goes during the execution?
5. What is concurrency control? Explain time stamping method.
6. What is data cube? How it is used in data warehousing?
7. How the OUTER JOIN operations differ from INNER JOIN operations?

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