

BCA 4th Semester Exam., 2018

RELATIONAL DATABASE MANAGEMENT  
SYSTEM

Time : 3 hours

Full Marks : 60

Instructions :

- (i) All questions carry equal marks.
- (ii) There are **SEVEN** questions in this paper.
- (iii) Attempt **FIVE** questions in all.
- (iv) Question Nos. **1** and **2** are compulsory.

1. Choose the correct answer (any six) :

(a) Foreign key is the one in which the \_\_\_\_\_ of one relation is referenced in another relation.

- (i) foreign key
- (ii) primary key
- (iii) reference
- (iv) check constraint

(b) An entity in *A* is associated with at most one entity in *B*, and an entity in *B* is associated with at most one entity in *A*. This is called as

- (i) one-to-many
- (ii) one-to-one
- (iii) many-to-many
- (iv) many-to-one

(c) Which of the following is a fundamental operation in relational algebra?

- (i) Set intersection
- (ii) Natural join
- (iii) Assignment
- (iv) None of the above

(d) Trigger is supported in

- (i) delete
- (ii) update
- (iii) views
- (iv) All of the above

( Turn Over )

- (e) Which one of the following provides the ability to query information from the database and to insert tuples into, delete tuples from, and modify tuples in the database?
- (i) DML (Data Manipulation Language)
  - (ii) DDL (Data Definition Language)
  - (iii) Query
  - (iv) Relational schema
- (f) A \_\_\_\_\_ in a table represents a relationship among a set of values.
- (i) column
  - (ii) key
  - (iii) row
  - (iv) entry
- (g) A table on the many side of a one-to-many or many-to-many relationship must
- (i) be in second normal form (2NF)
  - (ii) be in third normal form (3NF)
  - (iii) have a single attribute key
  - (iv) have a composite key

( Turn Over )

- (h) Functional dependencies are the types of constraints that are based on
- (i) key
  - (ii) key revisited
  - (iii) superset key
  - (iv) None of the above
- (i) The subset of SuperKey is a candidate key under what condition?
- (i) No proper subset is a SuperKey
  - (ii) All subsets are SuperKeys
  - (iii) Subset is a SuperKey
  - (iv) Each subset is a SuperKey
- (j) Which is a unary operation?
- (i) Selection operation
  - (ii) Primitive operation
  - (iii) Projection operation
  - (iv) Generalized selection

( 5 )

2. Answer any *three* questions :

- (a) What are the advantages of file processing system over DBMS?
- (b) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted.
- (c) What are the advantages and disadvantages of DBMS?
- (d) Explain the role and responsibilities of DBA.
- (e) Explain the various keys in DBMS.

3. Explain BCNF. How do you decompose your schema into Boyce-Codd normal form?

4. What is a trigger? What are the different types of triggers? Discuss the different components of a trigger.

5. Explain the concept of specialization and aggregation with example.

( 6 )

6. Discuss the various fundamental operations of relational algebra.

7. Discuss the major DBMS functions and components with diagram.

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