Roll No. …………………..

MCA–13/M.Sc.(IT)–14

Advance Database Management System

Master of Computer Application/Master of Science in Information Technology

(MCA/M.Sc.(IT)–11/12/16/17)

Fourth Semester, Examination, 2018

Time : 3 Hours   **Max. Marks : 80**

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Learners are required to attempt the questions contained in these Sections according to the detailed instructions given therein.

Section–A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. Why do we need to normalize databases ? Explain the difference between third normal form and second normal form with suitable example.

2. What do you mean by the term Transaction ? Briefly describe the ACID properties of the transaction. Classify that which problem is caused by the violation of which property of transaction in concurrent environment.

3. Explain the following terms :

   (a) Veiw

   (b) Indexer

   (c) Subqueries

   (d) Join

4. Explain the design of Entity Relationship diagram with a suitable example.

Section–B

(Short Answer Type Questions)

Note : Section 'B' contains eight (08) short answer type questions of eight (08) marks each. Learners are required to answer *four* (04) questions only.

1. Explain the data models.
2. Define Super key, Candidate key and Primary key, with the help of an example.
3. Explain the different types of SQL commands with suitable example.
4. What do you understand by aggregate function ? Explain with example.
5. Explain the desirable properties of transaction.
5. Explain the two-phase locking techniques for concurrency control.
7. What is the use of DROP command and what are the differences between DROP, TRUNCATE and DELETE commands ?
8. Justify "Any relation who is in BCNF is in 3NF but converse is not true."

Section–C

(Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this Section are compulsory.

1. To include integrity constraint in a existing relation use :

   (a) Create table   (b) Modify table

   (c) Alter table   (d) Drop table

2. Foreign key is the one in which the _____ of one relation is referenced in another relation.

   (a) Foreign key   (b) Primary key

   (c) References   (d) Check constraint

3. Which of the following is used to delete the entries in the referenced table when the tuple is deleted in course table ?

   (a) Delete

   (b) Delete cascade

   (c) Set null

   (d) All of the mentioned

4. A transaction may not always complete its execution successfully. Such a transaction is termed :

   (a) Aborted

   (b) Terminated

   (c) Closed

   (d) All of the mentioned

5. Each modification done in database transaction are first recorded into the :

   (a) Hard drive   (b) Datamart

   (c) Disk   (d) Log

6. Which of the following is an atomic sequence of database actions ?

   (a) Transaction   (b) Concurrency

   (c) Relations   (d) All of the mentioned

7. 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 :

   (a) One-to-many   (b) Many-to-many

   (c) One-to-one   (d) Many-to-one

8. Which one of the following uniquely identifies the elements in the relation ?

   (a) Secondary key   (b) Composite key

   (c) Foreign key   (d) Primary key

9. A _____ is a query that retrieves rows from more than one table or view :

   (a) Start   (b) End

   (c) Join   (d) All of the mentioned

10. The normal form which satisfies multivalued dependencies and which is in BCNF is :

    (a) 4NF   (b) 3NF

    (c) 2NF   (d) All of the mentioned