

MCA/13/M.Sc.(IT)–14**Advanced Database Management System**

Master of Computer Applications/Master of

Science in Information Technology

(MCA/MSc.IT–11/12/16/17)

Fourth Semester, Examination, 2017

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

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. 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. Explain the process of Normalization. List pros and cons of it.
2. Discuss the techniques for concurrency control with relevant examples.
3. Explain 3-tier Architecture of DBMS. List out demerits of DBMS.
4. Write short notes on the following :
 - (a) Entity-set
 - (b) Attributes

- (c) Relationship
- (d) Keys
- (e) Generalization
- (f) Aggregation

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. Define relational calculus.
2. Write a short note on SQL languages.
3. What do you understand by generalization ? Explain example.
4. Discuss the entity integrity and referential integrity.
5. What is meant by safe expression in relational calculus ?
6. What are the basic data types available for attributes in sql ?
7. What are the recovery concepts and recovery techniques in DBMS ?
8. Mention the characteristics of DBMS.

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. Consider the join of a relation R with relation S. If R has m tuples and S has n tuples, then the maximum size of join is :
 - (a) mn

- (b) $m + n$
 - (c) $(m + n)/2$
 - (d) $2(m + n)$
2. Which of the following is a comparison operator in SQL ?
- (a) =
 - (b) LIKE
 - (c) BETWEEN
 - (d) All of the above
3. A _____ is a special kind of a store procedure that executes in response to certain action on the table like insertion, deletion or updation of data.
- (a) Procedures
 - (b) Triggers
 - (c) Functions
 - (d) None of the mentioned
4. In case of any shut down during transaction before commit which of the following statements is done automatically ?
- (a) View
 - (b) Commit
 - (c) Rollback
 - (d) Flashback
5. An attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation.
- (a) Candidate

- (b) Primary
 - (c) Super
 - (d) Sub
6. In case of entity integrity, the primary key may be :
- (a) Not Null
 - (b) Null
 - (c) Both Null and Not Null
 - (d) Any value
7. Select * from instructor order by salary _____, name;
To display the salary from greater to smaller and name in ascending order which of the following options should be used ?
- (a) Ascending, Descending
 - (b) Asc, Desc
 - (c) Desc, Asc
 - (d) Descending, Ascending
8. Which one of the following is used to define the structure of the relation, deleting relations and relating schemas ?
- (a) DML (Data Manipulation Language)
 - (b) DDL(Data Definition Language)
 - (c) Query
 - (d) Relational Schema

9. Which one of the following is a set of one or more attributes taken collectively to uniquely identify a record ?
- (a) Candidate key
 - (b) Sub key
 - (c) Super key
 - (d) Foreign key
10. OLAP stands for _____.
- (a) Online analytical processing
 - (b) Online analysis processing
 - (c) Online transaction processing
 - (d) Online aggregate processing

