



## BRAINWARE UNIVERSITY

Term End Examination 2023

Programme – MCA-2020/MCA-2021

Course Name – Database Management Systems

Course Code - MCA203

( Semester II )

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Select which of the following is a command used to create a new table in SQL?
 

a) CREATE TABLE	b) ALTER TABLE
c) SELECT	d) UPDATE
- (ii) Which of the following is a command used to retrieve data from a database in SQL?
 

a) CREATE TABLE	b) ALTER TABLE
c) SELECT	d) UPDATE
- (iii) Which of the following is a command used to add new data to a database in SQL?
 

a) CREATE	b) INSERT
c) UPDATE	d) DELETE
- (iv) Which of the following is a command used to change the password of a user in SQL?
 

a) MODIFY PASSWORD	b) CHANGE PASSWORD
c) ALTER PASSWORD	d) UPDATE PASSWORD
- (v) Which of the following is a technique used to optimize the performance of a database?
 

a) Indexing	b) Normalization
c) Denormalization	d) All of the mentioned
- (vi) list What are the two main operations in the database transaction?
 

a) READ	b) WRITE
c) Both A and B	d) None of the mentioned
- (vii) tell What is the Lost Update Problem also known as?
 

a) W-W Conflict	b) W-R Conflict
c) R-R Conflict	d) None

(viii) identify What is the Dirty Read Problem also known as

- a) W-W Conflict
- b) W-R Conflict
- c) R-R Conflict
- d) None

(ix) What is the Unrepeatable Read Problem also known as identify

- a) Consistent Retrieval Problems
- b) Inconsistent Retrieval Problems
- c) Concurrent Retrieval Problems
- d) Non-concurrent Retrieval Problems

(x) define Which of the following is a concurrency control protocol?

- a) Lock Based Concurrency Control Protocol
- b) Timestamp Concurrency Control Protocol
- c) Validation Based Concurrency Control Protocol
- d) All of the mentioned

(xi) recognize Which of the following is an atomic sequence of database actions?

- a) Transaction
- b) Concurrency
- c) Relations
- d) All of the mentioned

(xii) define which can help us detect poor E-R design.

- a) Database Design Process
- b) E-R Design Process
- c) Relational scheme
- d) Functional dependencies

(xiii) tell Which of the following has each related entity set has its own schema and there is an additional schema for the relationship set.

- a) A many-to-many relationship set
- b) A multivalued attribute of an entity set
- c) A one-to-many relationship set
- d) All of the mentioned

(xiv) Identify In which of the following, a separate schema is created consisting of that attribute and the primary key of the entity set.

- a) A many-to-many relationship set
- b) A multivalued attribute of an entity set
- c) A one-to-many relationship set
- d) All of the mentioned

(xv) identify the best way to represent the attributes in a large database?

- a) Relational-and
- b) Concatenation
- c) Dot representation
- d) All of the mentioned

**Group-B**

(Short Answer Type Questions)

3 x 5=15

- 2. illustrate the issues with traditional file-based systems that make DBMS a better choice? (3)
- 3. What are the steps involved in query processing and Explain in brief. (3)
- 4. Define ACID properties in DBMS? (3)
- 5. Explain the types of ordered indices with suitable example. (3)
- 6. Explain about B+ tree index file? (3)

OR

Differentiate relation schema and relational instance?

(3)

**Group-C**

(Long Answer Type Questions)

5 x 6=30

- 7. List the data structures implemented by the storage manager (5)
- 8. Explain different types of attribute in ERD. (5)
- 9. justify a Relation Schema and a Relation and example (5)
- 10. evaluate the protocol that is used to maintain the concurrency concept. (5)
- 11. Design the different steps to convert ER to relational mapping (5)
- 12. justify B-tree differ from a B+ – tree and Why is a B+ – tree usually preferred as an access structure to a data file? (5)

OR

justify bulk loading of B+ tree indexing structure with suitable records

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