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 (5)

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