Extra

REV-01
BCA/17/21

2022/12

SET B

BACHELOR OF COMPUTER APPLICATION
THIRD SEMESTER
RELATIONAL DATABASE MANAGEMENT SYSTEMS
BCA-304

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 mins. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. DDL is provided for-
   a. Description of logical structure of database
   b. Addition of new structures in the database
   c. Manipulation & processing of database
   d. Description of physical structure of database system

2 In _____ indexing, index record appears only for a few items, each item points to a block.
   a. Dense
   b. Sparse
   c. Secondary
   d. Clustering

3. The atomic value is the main concern of
   a. 1NF
   b. 2NF
   c. 3NF
   d. 4NF

4. There is a possibility of table creation from a relationship, if the cardinality ratio between two entities are-
   a. 1:M
   b. M:1
   c. 1:1
   d. M:N

5 The _____ clause in used in SQL to arrange the values in ascending or descending way in a query.
   a. group by
   b. having
   c. order by
   d. join by

6 In an ER Diagram, derived attribute is represented by-
   a. Oval
   b. Dotted oval
   c. Dotted underline
   d. Solid underline

7. The _____ in DBMS also known as Optimistic Concurrency Control Technique is a method to avoid concurrency in transactions.
   a. Lock-Based Protocol
   b. Validation based Protocol
   c. Two Phase Locking Protocol
   d. Timestamp-Based Protocol

8 Find the correct sequence of Normalization-
   a. 1NF,2NF,BCNF, 3NF, 4NF, 5NF
   b. 1NF, BCNF, 2NF, 3NF, 4NF, 5NF
   c. 1NF,2NF, 3NF, 4NF, BCNF, 5NF
   d. 1NF,2NF, 3NF, BCNF, 4NF, 5NF

9 The time taken to position the read-write head over the required track or cylinder is called _____.

a. Rotational latency time
b. Seek time
c. Sequential I/O time
d. Random I/O time

10 The Two Phase Locking mechanism, the 3rd phase says that-

a. When the transaction begins to execute, it requires permission for the locks it needs
b. The transaction obtains all the locks.
c. The transaction cannot demand any new locks until it releases the acquired locks
d. All of the above

11. To allow all the commands all the tables of 'BCA3RD' database to user 'PQRS', the code is-

a. Grant all on *.* to PQRS;
b. Grant all on BCA3RD.* to PQRS;
c. Grant all on *.BCA3RD to PQRS;
d. Grant all on BCA3RD.* from PQRS;

12 The number of attributes in the relation is known as _____ of the relation.

a. Degree
b. Cardinality
c. Tuple
d. Record

13. "A relation that is in First Normal Form and every non-primary-key attribute is fully functionally dependent on the _____ key, then the relation is in Second Normal Form." – Fill up the blank.

a. Candidate
b. Super
c. Foreign
d. Primary

14 The _____ is a desirable property of transaction.

a. Isolation
b. Atomicity
c. Durability
d. All of the above

15. Student_name is an example for _____ attribute.

a. Composite
b. Multi valued
c. Both a &b
d. Unique

16. A column in a table represents _____ among a set of values in RDBMS.

a. collection of relationships
b. relationship
c. attribute
d. All of the above

17. A view is a _____ table that is one which actually does not exist.

a. Physical
b. Virtual
c. Distinct
d. Log

18. The _____ acts like a buffer in query Processing.

a. Syntax Checking
b. Optimizer
c. Shared Pool
d. Executable Engine

19 If A->B and B->C are two FDs then A->C is called _____dependency.

a. Functional
b. Fully functional
c. Partial
d. Transitive

20 Reverse Folding method is used in _____ technique.

a. Indexing
b. Parsing
c. Hashing
d. Query Processing

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Descriptive

Time : 2 hrs. 30 mins. **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. a. Why Constraints play an important role in DBMS. 4+6=10
   b. Consider a table of Employee with its related fields. Now identify the constraints from the table & justify the reasons of the constraints in the table.
2. How it is possible to create relational schema using ER diagram? Explain all the possible rules for this using the Hotel Management System as a case study. 3+7=10
3. a. Take an example, you are going to watch a movie. So, the first thing is to book a ticket. Which technique of DBMS is most useful in this situation, justify and explain why? 4+6=10
   b. How concurrency control is used in DBMS, explain its types.
4. a. What do you mean by Group Functions? 2+5+3=10
   b. Explain all the group functions using example for each.
   c. Write a query in SQL to display the emp_no, emp_name, dept_no, emp_salary of those Employees whose department is not ADMIN.
5. a. How Hashing differs with Indexing? 4+6=10
   b. Explain the types of Hashing techniques along with example for each.
6. Explain the concept of mapping and its rules with suitable example for each rule. 10
7. a. Explain the Transitive Dependency. 3+3+4=10
   b. How Transitive Dependency is used in Normalization.
   c. Compare 1st, 2nd and 3rd Normal Forms.
8. a. Write the command to create a user in MYSQL. 1+4+1+4=10
   b. What commands are used to allow and remove permissions from the user? Explain with example.
   c. How serializability can be used in Concurrency control?
   d. Explain the difference between shared and exclusive lock with the help of serializability.

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