

**BACHELOR OF COMPUTER APPLICATION  
THIRD SEMESTER  
RELATIONAL DATABASE MANAGEMENT SYSTEMS  
BCA-304(REPEAT)**

**SET  
A**

[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. Student\_name is an example for \_\_\_\_\_ attribute.
  - a. Composite
  - b. Multi valued
  - c. Both a & b
  - d. Unique
2. 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
3. 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
4. A view is a \_\_\_\_\_ table that is one which actually does not exist.
  - a. Physical
  - b. Virtual
  - c. Distinct
  - d. Log
5. In \_\_\_\_\_ indexing, index record appears only for a few items, each item points to a block.
  - a. Dense
  - b. Sparse
  - c. Secondary
  - d. Clustering
6. If A->B and B->C are two FDs then A->C is called \_\_\_\_\_ dependency.
  - a. Functional
  - b. Fully functional
  - c. Partial
  - d. Transitive
7. 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
8. The atomic value is the main concern of
  - a. 1NF
  - b. 2NF
  - c. 3NF
  - d. 4NF
9. The \_\_\_\_\_ acts like a buffer in query Processing.
  - a. Syntax Checking
  - b. Optimizer
  - c. Shared Pool
  - d. Executable Engine

10. The \_\_\_\_\_ in DBMS also known as Optimistic Concurrency Control Technique is a method to avoid concurrency in transactions.
- Lock-Based Protocol
  - Validation based Protocol
  - Two Phase Locking Protocol
  - Timestamp-Based Protocol
11. The \_\_\_\_\_ clause is used in SQL to arrange the values in ascending or descending way in a query.
- group by
  - having
  - order by
  - join by
12. In an ER Diagram, derived attribute is represented by-
- Oval
  - Dotted oval
  - Dotted underline
  - Solid underline
13. Reverse Folding method is used in \_\_\_\_\_ technique.
- Indexing
  - Parsing
  - Hashing
  - Query Processing
14. The Two Phase Locking mechanism, the 3<sup>rd</sup> phase says that-  
When the transaction begins to
- execute, it requires permission for the locks it needs
  - The transaction obtains all the locks.
  - The transaction cannot demand any new locks until it releases the acquired locks
  - All of the above
15. "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.
- Candidate
  - Super
  - Foreign
  - Primary
16. The \_\_\_\_\_ is a desirable property of transaction.
- Isolation
  - Atomicity
  - Durability
  - All of the above
17. Find the correct sequence of Normalization-
- 1NF,2NF,BCNF, 3NF, 4NF, 5NF
  - 1NF, BCNF, 2NF, 3NF, 4NF, 5NF
  - 1NF,2NF, 3NF, 4NF, BCNF, 5NF
  - 1NF,2NF, 3NF, BCNF, 4NF, 5NF
18. To allow all the commands all the tables of 'BCA3RD' database to user 'PQRS', the code is-
- Grant all on \*.\* to PQRS;
  - Grant all on BCA3RD.\* to PQRS;
  - Grant all on \*.BCA3RD to PQRS;
  - Grant all on BCA3RD.\* from PQRS;
19. The time taken to position the read-write head over the required track or cylinder is called \_\_\_\_\_.
- Rotational latency time
  - Seek time
  - Sequential I/O time
  - Random I/O time

- 20 The number of attributes in the relation is known as \_\_\_\_\_ of the relation.
- a. Degree
  - b. Cardinality
  - c. Tuple
  - d. Record

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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? 3+7=10  
Explain all the possible rules for this using the Hotel Management System as a case study.
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 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> 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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