BACHELOR OF COMPUTER APPLICATION
THIRD SEMESTER [SPECIAL REPEAT]
RELATIONAL DATABASE MANAGEMENT SYSTEM
BCA-304
[USE OMR SHEET FOR OBJECTIVE PART]

SET A

Duration: 3 hrs.

Full Marks: 70

(*Objective*)

Time: 30 mins.

Marks: 20

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

1. "The transaction enters this state after the last statement of the transaction has been executed"- is the state of_____.
    a. Committed
    b. Aborted
    c. Partially committed
    d. Active

2. Address is an example for _____ attribute.
    a. Composite
    b. Multi valued
    c. Both a & b
    d. Unique

3. The_____ is a desirable property of transaction.
    a. Isolation
    b. Atomicity
    c. Durability
    d. All of the above

4. A view is a_____ table that is one which actually does not exist.
    a. Physical
    b. Virtual
    c. Distinct
    d. Log

5. System generated error like integer overflow or divide-by-zero error is a _____ type of failure.
    a. Soft
    b. Hard
    c. Network
    d. Commit point

6. Select the valid type/s of data technique/s.
    a. Normalisation
    b. E R Modeling
    c. Both a & b
    d. None of the above

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

8. An advantage of Database Management System is:
    a. Data is independent on programs
    b. Data redundancy increases
    c. Data is integrated & can be accessed by multiple programs
    d. All of the above

9. Dividing the whole table data into smaller chunks and storing them in different Data bases in the Distributed DBMS is called_____.
   a. Data replication
   b. Data fragmentation
   c. Data decentralization
   d. Network transparency

10. Rollback is used for _____operation in a transaction.
    a. Commit point
    b. Redo
    c. Undo
    d. Savepoint

11. The _____in DBMS, as the name suggests is a relationship between attributes of a table dependent on each other.
    a. Functional dependency
    b. Transitive dependency
    c. Multi-valued dependency
    d. Join dependency

12. At_____ phase of query processing, the query compiler translates the query specification into an executable program.
    a. Compile-time
    b. Run-time
    c. Optimizer
    d. Execution engine

13. DML 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

14. In an ER Diagram, foreign key is represented by:
    a. Oval
    b. Dotted oval
    c. Dotted underline
    d. Solid underline

15. 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

16. "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."
    a. Candidate
    b. Super
    c. Foreign
    d. Primary

17. 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

18. If A->B and B->C are two FDs then A->C is called _____dependency.
    a. Functional
    b. Fully functional
    c. Partial
    d. Transitive

19. In SQL, _____function has a special meaning that counts the number of rows of a relation.
    a. Count(fieldname)
    b. Count(*)
    c. Both a & b
    d. None of them

20. The concept of Bucket overflow is used in_____.
    a. Indexing
    b. Query Processing
    c. Hashing
    d. Views

-- --- --

(Descriptive)

Time : 2 hr. 30 mins.   Marks : 50

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

1. What do you mean by three-schema Architecture? Explain each   10
   level with the help of a suitable diagram.

2. a) Why Keys play an important role in DBMS?   4+6=10
   b) Differentiate super key, candidate key and alternate key using a
      suitable example.

3. a) What is the significance of using concurrency control?   2+8=10
   b) Explain the four protocols of Concurrency Control.

4. a) How Indexing differs with Hashing?   4+6=10
   b) Explain the Primary Indexing along with its types using example.

5. a) What is the significance of using an ER Diagram in a database? 2+3+5=10
      Write down the symbols used in ER Diagram.
   b) Draw an ER Diagram for Examination Management System.

6. a) What is Functional Dependency?   4+6=10
   b) Explain all types of normal forms along with the examples.

7. a) How the Aggregate Functions are used in SQL queries?   2+5+3=10
   b) Explain 5 aggregate functions using example.
   c) Write a query in SQL to display the emp_no, emp_name,
      emp_salary of those Employees whose salary is more than the
      average salary.

8. a) Why transaction processing is used?   2+4+4=10
   b) Explain all the properties of database transaction.
   c) Define the states of transaction along with a diagram.

== *** ==