**F - 354**

## M.Sc. (IT) (First Semester)
### Examination, Dec.-Jan., 2021-22
#### Paper Second
### RDBMS AND SQL

*Time : Three Hours]*      **[Maximum Marks : 100**

**[Minimum Pass Mark : 40**

**Note: Attempt all sections as directed.**

### SECTION – A
#### (Objective Type Questions,)

Note: Attempt all questions.      **each 1 mark.**

Q1 . Database systems have functional components named as:

    A. Relationship manager and query processor

    B. Entity processor and query manager

    C. Information processor and storage manager

    D. Query processor and storage manager

Q2. Which is the false statement?

    A. A database is systematic compilation of records in a computer.

    B. Data helps in making decisions

    C. A set of application programs used to access, update and manage that data which form the data management system

    D. A transaction must completely succeed or completely fail

Q3. Data independence means

    A. data is defined separately and not included in programs.

    B. programs are not dependent on the physical attributes of data

    C. programs are not dependent on the logical attributes of data

    D. both B and C

Q4. The actual content in the database at a particular point is called ..............

    A. Schema      B. Attribute

    C. Parameter      D. Domain

Q5. Entity Relationship Model is not representation of database.

    A. Sheet      B. Graphical

    C. Pictorial      D. Diagram

Q6. Which of the following can be a multivalued attribute?

    A. Phone_number      B. Name

    C. Date_of_birth      D. All of the mentioned

Q7. Relational Algebra is a _____ query language that takes two relations as input and produces another relation as an output of the query.

    A. Procedural      B. Relational

    C. Fundamental      D. Structural

Q8. Which of the following is used to denote the selection operation in relational algebra?

    A. Sigma (Greek)      B. Lambda (Greek)

    C. Pi (Greek)      D. Omega (Greek)

Q9. The statement in SQL which allows changing the definition of a table is

    A. Create.      B. Update.

    C. Alter.      D. Select.

Q10. Which is not anomalies that occur when the database is not normalized

    A. Deletion      B. Update

    C. Select      D. Insertion

Q11. Which-one of the following statements about normal forms is FALSE?

    A. BCNF is stricter than 3 NF

    B. Loss less, dependency – preserving decomposition into BCNF is always possible

    C. Lossless, dependency -preserving decomposition into 3 NF is always possible

    D. Any relation with two attributes is BCNF

Q12. Which functional dependency types is/are not present in the following dependencies?

        Empno -> EName, Salary, Deptno, DName

        DeptNo -> DName

        EmpNo -> DName

    A. Partial functional dependency      B. Both Partial and Transitive

    C. Transitive functional dependency      D. Full functional dependency

Q13. PL/SQL block has up to four different sections, How many section is mandatory?

    A. TWO      B. ONE

    C. THREE      D. FOUR

Q14. All steps are using in an Explicit Cursor expect:

    A. OPEN      B. EXCEPTION

    C. DECLARE      D. FETCH

Q15. How many rows will be inserted in the messages table? In this program:

```
DECLARE
v_start_sales NUMBER := 2;
v_end_sales NUMBER := 100;
BEGIN
FOR i IN v_start_sales..v_end_sales LOOP
INSERT INTO messages(msgid)
VALUES v_start_sales;
END LOOP;
END;
```

    A. 0      B. 99

    C. 100      D. 1

Q16. Which of the following is not true about PL/SQL decision making structures?

   A. The IF-THEN-ELSIF statement allows you to choose between several alternatives.

   B. The IF statement associates a condition with a sequence of statements enclosed by the keywords THEN and END

   C. The IF statement also adds the keyword ELSE followed by an alternative sequence of statement.

   D. PL/SQL have a CASE statement.

Q.17. Which is correct sequence of query processing?

   A. Parsing and translation ->optimization->evaluation

   B. Evaluation-> Parsing and translation->optimization

   C. Optimization->evaluation-> Parsing and translation

   D. Optimization-> Parsing and translation > evaluation

Q.18. Files are logically partitioned into storage unit of fixed length known as

   A. Blocks                 B. Track

   C. Segment            D. Sectors

Q.19. A sequence of primitive operations that can be used to evaluate a query are called as.............

   A. Query evaluation plan        B. Query evaluation algebra

   C. Query evaluation primitive      D. Query evaluation engine

Q.20. Which are small fixed portions that provide greater flexibility and it may require large tables or complex structures for their allocation?

   A. Blocks                 B. Columns

   C. Partitions           D. Segments

## SECTION – B

### (Very Short Answer Type Questions)

**Note: Attempt all questions. Answer using 2-3 sentences.**       **each 2 marks**

   Q.1 What is Information?

   Q.2 What is Object oriented database?

   Q.3 What is inner join?

   Q.4 What is relationship?

   Q.5 What do you understand by view in SQL?

   Q.6 What is embedded SQL?

   Q.7 What is purity function?

   Q.8 What are the advantages of package?

   Q.9 What is Security and recovery?

   Q.10 What is domain constraints?

## SECTION – C

### (Short Answer Type Questions)

**Note: Attempt all questions. Answer precisely using <75 words.**     **each 3 marks.**

   Q.1 What is the data independence?

   Q.2 What is client/server database?

   Q.3 What is Specialization in ER Model?

   Q.4 What is difference between simple and complex queries?

   Q.5 What is Application Programming Interface?

   Q.6 What do understand by functional dependence?

   Q.7 Write the advantage of PL/ SQL.

   Q.8 What is parameterized cursors?

   Q. 9 What is optimization?

   Q. 10 What is security and authorization in SQL?

## SECTION – D

### (Long Answer Type Questions)

**Note: Attempt all question. Answer precisely using 150 words.**     **each 6 marks.**

Q.1 What data problems tend to arise in application development? What are the advantages of the DBMS approach to application development? Why is the Relational Database Approach better than earlier methods?

<div align="center">OR</div>

Explain the following:-

   (i)     Database Languages

   (ii)    Contents of Data Dictionary

Q.2 What do you mean by relational algebra? Explain the different types operation with example.

<div align="center">OR</div>

Explain the following:-

   (i)     Tuple Relational calculus

   (ii)    Concept of keys

Q.3. What do you mean by pitfalls in database design? Explain the various types of anomalies.

<div align="center">OR</div>

Explain the following:-

   (i)     Role of Decomposition in Database

   (ii)    Type of Integrity Constraints

Q.4. Write the PL/SQL program for print following series

     1     3     5     7     9...................................n

<div align="center">OR</div>

Write the PL/SQL Program to Print Patterns

<div align="center">

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Q.5. What is the Indexing? Explain the indexed file B- tree and $B^+$ tree

<div align="center">OR</div>

Explain the following:-

   (i)     File Organization

   (ii)    Query Processing