

VCD-120522 -F.Y.B.Sc. (DS)-SEM II- Database Management-2½ HRS.-75 Marks

- N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Mixing of sub-questions is not allowed.
4) Assume suitable data if necessary and state it clearly.

Q.1 Attempt All.

[40 Marks]

a) Multiple Choice Questions.

1. Either all actions of a transaction are carried out or none are referring to the property

- a) Atomicity
b) Isolation
c) Consistency
d) Durability

2. _____ is a type of data abstraction that is used to provide conceptual representation.

- a) Metadata
b) Query
c) Data model
d) File

3. To make the changes permanent, a _____ statement has to be given at the SQL prompt.

- a) Savepoint
b) Savepoint or Rollback
c) Rollback
d) Commit

4. Foreign key is the one in which the _____ of one relation is referenced in another relation.

- a) Surrogate key
b) Candidate key
c) Primary key
d) Check constraint

5. A _____ is a schedule whose effect on any consistent database instance is guaranteed to be identical to that of serial schedule.

- a) Serial schedule
b) Conflict Serializable schedule
c) Serializable schedule
d) Conflict Equivalent schedule

6. The effect of a Transaction should persist even if the system crashes before all its changes are reflected on disk. This property refers to _____.

- a) Atomicity
b) Isolation
c) Consistency
d) Durability

7. Oval shape used to represent _____ in ER Diagram.

- a) Entity
b) Data
c) Attribute
d) Name

8. _____ clause is used with aggregate functions to retrieve data category wise.

- a) Having
b) Order by
c) Group by
d) Where

9. Entity types that do not have key attributes of their own is called _____ entity.
- a) Strong
b) Binary
- b) Weak
d) Prime
10. _____ consists of atomic values and no repeating group.
- a) 3 NF
c) BCNF
- b) 2 NF
d) 1 NF
11. _____ is the process of defining a set of subclasses of an entity type.
- a) Generalization
c) Specialization
- b) Aggregation
d) Abstraction
12. Third Normal Form (3 NF) is based on the concept of _____.
- a) Functional Dependency
c) Transitive Dependency
- b) Trivial Attributes
d) Surrogate Key
13. A _____ represents association among two or more entities.
- a) Entity
c) Attribute
- b) Relationship
d) Metadata
14. A database language used for defining the database structure and schema is called as _____.
- a) DCL
c) DML
- b) DTL
d) DDL
15. _____ return all rows from the right table and matching rows from the left table or null if no matching rows found in the left table.
- a) LEFT JOIN
c) CROSS JOIN
- b) RIGHT JOIN
d) OUTER JOIN
16. SELECT stud_name FROM Student WHERE class_name LIKE '_____ Data Science';
In above query, which of the following can be placed in the query's blank portion to select "class_name" that also contains "Data Science" as its ending string?
- a) \$
c) &
- b) %
d) _
17. _____ is a virtual table created by a query by joining one or more tables.
- a) Subquery
c) View
- b) Function
d) Procedure
18. _____ function search and replace a substring in a string.
- a) LTRIM
c) REPLACE
- b) PLACE
d) RTRIM

19. Which SQL function is used to count the number of rows in a SQL Query?

- a) COUNT ()
- b) COUNT (*)
- c) SUM ()
- d) COUNTROWS ()

20. _____ function is used to retrieve next value in a sequence.

- a) CURRVAL
- b) ANOTHERVAL
- c) NEXTVAL
- d) MOREVAL

Q. 2 Attempt the following.

A) Solve any ONE.

[04 Marks]

- 1) What are the advantages of DBMS over File System?
- 2) Explain the degrees of Data Abstraction.

B) Solve any ONE.

[03 Marks]

- 1) Define Entity, Derived attribute and Simple attribute.
- 2) Explain Ternary Relationship with suitable example.

Q. 3 Attempt the following.

A) Solve any ONE.

[04 Marks]

- 1) Write a short note on Specialization.
- 2) What is Primary Key Constraint and Foreign Key Constraint?

B) Solve any ONE.

[03 Marks]

- 1) Explain subclass and superclass with respect to EER.
- 2) What is Normalization? Explain Second Normal Form.

Q. 4 Attempt the following.

A) Solve any ONE.

[04 Marks]

1) Consider following tables-

Student (rollno, sname, city, marks, classid)

Class (classid, classname, capacity)

Solve following queries –

- i) Find out how many students located in each city?
- ii) Display the names of the students whose marks are in the range of 75 to 90.
- iii) Display the details of students enrolled in the class.

2) Explain any four Aggregate Functions used in MySQL.

B) Solve any ONE.

[03 Marks]

- 1) Explain ORDER BY clause with suitable example.
- 2) What do you mean by subquery? Explain with example.

Q. 5 Attempt the following.

A) Solve any ONE.

[04 Marks]

- 1) What are views? How to create it?
- 2) Briefly explain Database Life Cycle.

B) Solve any ONE.

[03 Marks]

- 1) Explain any 3 DDL command used in MySQL with proper syntax.
- 2) What do you mean by Sequence? Explain the syntax of sequence creation.

Q. 6 Attempt the following.

A) Solve any ONE.

[04 Marks]

- 1) Explain Deadlock detection mechanism.
- 2) Explain Two Phase Locking protocol.

B) Solve any ONE.

[03 Marks]

- 1) What is an Index? Explain its syntax and give suitable example.
- 2) Explain ACID properties of transaction.
