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) Weak
b) Binary
d) Prime

10. _____ consists of atomic values and no repeating group.
a) 3 NF
b) 2 NF
c) BCNF
d) 1 NF

11. _____ is the process of defining a set of subclasses of an entity type.
a) Generalization
b) Aggregation
c) Specialization
d) Abstraction

12. Third Normal Form (3 NF) is based on the concept of _____.
a) Functional Dependency
b) Trivial Attributes
c) Transitive Dependency
d) Surrogate Key

13. A _____ represents association among two or more entities.
a) Entity
b) Relationship
c) Attribute
d) Metadata

14. A database language used for defining the database structure and schema is called as_____.
a) DCL
b) DTL
c) DML
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
b) RIGHT JOIN
c) CROSS 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) $
b) %
c) &
d) _

17. _____ is a virtual table created by a query by joining one or more tables.
a) Subquery
b) Function
c) View
d) Procedure

18. _____ function search and replace a substring in a string.
a) LTRIM
b) PLACE
c) REPLACE
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.

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