Time: 2 hours   Max. Marks: 80
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Q1.	Choose the correct option for following questions. All the Questions are compulsory and each carry 2 marks
1.	Farmer goes to ATM center and withdraw Rs. 300.Which kind of database user is he?
Option A:	Application Programmer
Option B:	Sophisticated user
Option C:	Specialized user
Option D:	Unsophisticated user
2.	Collection of information stored in database at a particular moment is known as _____.
Option A:	View
Option B:	Schema
Option C:	Instance
Option D:	Record
3.	There are similarities between the instructor entity set and the secretary entity set in the sense that they have several attributes that are conceptually the same across the two entity sets: namely, the identifier, name, and salary attributes. What is this process?
Option A:	Commonality
Option B:	Specialization
Option C:	Generalization
Option D:	Similarity
4.	Which of the following is another name for a weak entity?
Option A:	Child
Option B:	Owner
Option C:	Dominant
Option D:	Entity
5.	Which relationship is used to represent a specialization entity?
Option A:	ISA
Option B:	AIS
Option C:	ONIS
Option D:	WHOIS
6.	The attribute AGE is calculated from DATE_OF_BIRTH. The attribute AGE is _____
Option A:	Simple attribute
Option B:	Composite attribute
Option C:	Multivalued attribute

Option D:	Derived attribute
7.	Foreign Keys implement _____ constraint in the Relational Schema.
Option A:	Not Null
Option B:	Unique
Option C:	Entity Integrity
Option D:	Referential Integrity
8.	Relational Algebra is a _____ query language that takes two relations as input and produces another relation as an output of the query.
Option A:	Relational
Option B:	Structural
Option C:	Procedural
Option D:	Fundamental
9.	Which of the following is used to denote the selection operation in relational algebra?
Option A:	Pi (Greek)
Option B:	Sigma (Greek)
Option C:	Lambda (Greek)
Option D:	Omega (Greek)
10.	For select operation the _____ appear in the subscript and the _____ argument appears in the parenthesis after the sigma.
Option A:	Predicates, relation
Option B:	Relation, Predicates
Option C:	Operation, Predicates
Option D:	Relation, Operation
11.	Which one of the following cannot be included in the CREATE TABLE command in SQL?
Option A:	Names and Data Types of the table columns
Option B:	Primary Key and Foreign Key
Option C:	Default Values for the table columns
Option D:	Who is authorized to access the table
12.	Consider the following Relation Schema: Weather (City, Temperature, Humidity, Condition) Find the names of cities whose temperature is not in the range of 71 to 80.
Option A:	SELECT City FROM Weather WHERE Temperature NOT IN (71 to 80)
Option B:	SELECT City FROM Weather WHERE Temperature IN (71 to 80)
Option C:	SELECT City FROM Weather WHERE Temperature NOT BETWEEN (71 to 80)
Option D:	SELECT City FROM Weather WHERE Temperature BETWEEN (71 to 80)
13.	Which of these is also known as a virtual table?
Option A:	SCHEMA
Option B:	DATABASE
Option C:	JOIN
Option D:	VIEW

14.	In the given query which of the keywords has to be inserted? INSERT INTO employee _____ (1002, Joey,2000);
Option A:	Table
Option B:	Values
Option C:	Relation
Option D:	Field
15.	Which one of the following data definition commands is not a SQL command?
Option A:	Create table
Option B:	Drop table
Option C:	Modify table
Option D:	Drop domain
16.	Which of the following is NOT a common pitfall or issue in the Relational Database Design?
Option A:	Unique Tuples
Option B:	Null Tuples
Option C:	Spurious Tuples
Option D:	Redundancy
17.	Which desirable characteristic out of the following, are imparted during the process of Normalization?
Option A:	Anomalies
Option B:	Redundancies
Option C:	Optimization
Option D:	Null Tuples
18.	For a Relational Schema R(A,B,C,D,E,F), the Dependency Set is given as – {A,B} ---> {C,D,E,F}. Which of the following statement correctly describes it?
Option A:	The relation is at least 2NF Compliant
Option B:	There is no Functional dependency in relation
Option C:	There exists a Transitive Dependency in relation
Option D:	There is Partial Functional Dependency in relation
19.	Which of the following is NOT a correct type of Anomaly experienced in the design of databases_____
Option A:	Deletion Anomaly
Option B:	Insertion Anomaly
Option C:	Modification Anomaly
Option D:	Transfer Anomaly
20.	_____ allows only committed data to be read and further requires that no other transaction is allowed to update it between two reads of a data item by a transaction.
Option A:	Read uncommitted
Option B:	Repeatable read
Option C:	Serializable
Option D:	Read committed

Q2	Solve any Two Questions 10 marks each
A	Construct on E-R diagram for a car-insurance company that has a set of customers each of whom owns one or more cars. Each car has associated with it zero to any number of recorded accidents.
B	Employees(Empid, Fname, Lname, Email, Phoneno, Hiredate, Jobid, Salary, Mid, Did) Departments(Did , Dname, Managerid , Locationid) Locations(Locationid , Streetadd, Postalcode, City) Write the SQL queries for the following. 1. List the employees have a manager who works for a department based in the US. 2. Write a query to display the details of all employees in the Finance department. 3. Give 10% hike to all the Employees working in Did 20. 4. Write a query to display all the information of the employees whose salary is within the range 1000 & 3000. 5. Display the information of all the employees whose first name starts with 'R' in descending order of their salary.
C	Define normal forms and explain with suitable example first, second and third normal form.

Q3.	
A	**Solve any Two 5 marks each**
i.	Explain ACID Properties of transaction
ii.	Define DBA. Discuss role of DBA
iii.	Explain specialization and generalization
B	**Solve any One** **10 marks each**
i.	What is conflict serializability? How precedence graph is used to check whether the schedule is conflict serializable or not?
ii.	Explain DDL and DML commands with proper example.