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ODD Semester Examination-2022

Paper Name: Introduction to Database Management system Paper Code: BCA 302

Time: 3 Hours

Maximum Marks: 75

Note: Mobile Phones or programmable calculator or any equipment with memory are not allowed inside the examination hall.

SECTION: A (35 Marks)

True or False

All questions are compulsory (35x1=35)

1. A schedule is view Serializable IF it is view Equivalent to a serial schedule
2. SQL stands for Structured Query Language
3. DBMS supports Normalization
4. RDBMS is suitable for large organization where the size of the data is huge
5. University code is an example of single value attributed
6. Data consistency is ensured in a database because there is no data redundancy
7. E-R stand for Entity Relational Model
8. Design of database at logical level is called logical schema
9. DBMS provide backup and recovery
10. Cross-product (X) allows to combine two relations
11. E.F.Codd was a computer scientist who invented relational model
12. DBMS don't provide multiuser environment
13. The data stored in a database at particular instance of time is called DBMS Instance
14. DDL stands for Data Delete Language
15. A schedule is called conflict Serializable if it can be transformed into a serial schedule by swapping non-conflicting operations
16. SQL can set permissions on tables and views
17. Data base anomalies is a fault in a database that usually emerges as a result of shoddy planning and storing everything in a flat database
18. Generalization is a process in which the common attributes of more than one entities form a new entity.
19. Relational Algebra is procedural query language
20. Armstrong axioms refer to the sound and complete set of inference rules or axioms
21. The concept of Keys is used to identify record of data from the table
22. Diamond symbol is use to represent relationship in ER Model
23. Data integrity means that the data is accurate and consistent in the database
24. MongoDB and OrientDB are database software
25. TRUNCATE command is use to delete all the rows from table
26. A database lock is a mechanism to protect a shared piece of data from getting updated by two or more database users at the same time
27. One teacher has many classes is an example of one-to-many relationship
28. OLTP stands for Online transactional processing
29. COUNT() returns the number of table rows, including rows with null values.

30. A view is a virtual table which consists of a subset of data contained in a table
31. DBA stands for Database Auditor
32. Two Phase locking protocol is one of the concurrency control technique
33. Exclusive lock is denoted by X
34. Create command is used to create table in SQL
35. Oracle 12i is a version of oracle database

SECTION-B (4x5=20 Marks)

Attempt any FOUR Questions.

1. Define Conflict Serializability. Check from a given schedule whether schedule is Conflict Serializable or NOT.

T ₁	T ₂	T ₃	T ₄
R(X)			
		R(Y)	
		R(X)	
	R(Y)		
			W(Y)
W(Z)			
W(Y)			
			W(Z)

2. Explain 12 codd rules of relational model
3. Explain transaction life cycle and describe its phases in detail
4. What is Normalization?
Identify the Normal form and candidate keys for the given relation R(A, B, C,D,E, H) having the set of FD as: { A-->B, BC-->D, E-->C,D-->A}
5. Who is Database Administrator? Explain 10 functions of Database Administrator

SECTION-C (2x10=20 Marks)

Attempt any TWO Questions.

1. The following is the list of events in an inter-leaved execution of set T₁, T₂, T₃, T₄, T₅, T₆ and T₇ assuming 2PL. Is there a deadlock? If 'yes' which transactions are involved in deadlock?

Time	Transaction	Code
t ₁	T ₂	Lock(A,X)
t ₂	T ₁	Lock(C,S)
t ₃	T ₃	Lock(B,S)
t ₄	T ₅	Lock(A,S)
t ₅	T ₄	Lock(E,S)
T ₆	T ₆	Lock(D,X)
T ₇	T ₇	Lock(B,S)

2. Explain 3 Tier Architecture of Database Management System (DBMS)
3. Explain ACID properties to describe the integrity of data
4. Explain 10 applications of Database management system