University of Mumbai

Examination 2021 under cluster 5(Lead College: APSIT)

Examinations Commencing from 01st June 2021

Program: Electronics and Telecommunication Engineering

Curriculum Scheme: Rev2016

Examination: TE Semester VI

Course Code: ECCDLO6023 and Course Name: Database Management System

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Which one of the following categories of commands provides the ability to receive information from the database and to insert tuples into, delete tuples from, and modify tuples in the database?
Option A:	DML (Data Manipulation Language)
Option B:	DDL (Data Definition language)
Option C:	Query
Option D:	Relational Schema
2.	Which of the following is not a valid data model?
Option A:	Object Oriented Data Model
Option B:	Structured Data Model
Option C:	Hierarchical Data Model
Option D:	Entity-Relation Data Model
3.	A transaction completes its execution is said to be
Option A:	Saved
Option B:	Loaded
Option C:	Rolled
Option D:	Committed
4.	Concurrency control manager ensures
Option A:	Consistency of the data
Option B:	Fast retrieval of the data
Option C:	Large storage availability for the Data
Option D:	Easy way to use DBMS
5.	Granting of authorization for data access is function of
Option A:	Database Programmer
Option B:	Database Administrator
Option C:	Special user
Option D:	Naive user
6.	What is a technique used to retrieve data and refer to the database through an application program?
Option A:	Query

Option B:	Transaction
Option C:	Polling
Option D:	Trigger
7.	Degree of Relationships defines the
Option A:	Number of participating entities in a relationship
Option B:	Validity of the relationship between entities
Option C:	No. of dependent entities in a Relation
Option D:	No. of attributes related with other entities
8.	Which of the following is not a valid constraint?
Option A:	Domain constraint
Option B:	Key constraint
Option C:	Referential integrity constraint
Option D:	Time constraint
9.	Which of the following Relational Algebra operations does not use a binary operator?
Option A:	Union
Option B:	Difference
Option C:	Cartesian product
Option D:	Rename
10.	Which of the following is not correct Data Definition Language command?
Option A:	CREATE
Option B:	ALTER
Option C:	DELETE
Option D:	UPDATE
11.	Which of the following is not a transaction state?
Option A:	Partially committed
Option B:	Aborted
Option C:	End
Option D:	Committed
12.	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)
13.	Which of the following normal forms deal with the atomic values of the domain?
Option A:	1NF
Option B:	2NF
Option C:	3NF
Option D:	BCNF
14.	Which of the following is not an Aggregate function?

Option A:	Min
Option B:	Max
Option C:	Select
Option D:	Avg
15.	To remove a relation from an SQL database, we use the _____ command.
Option A:	Delete
Option B:	Purge
Option C:	Remove
Option D:	Drop table
16.	Which of the following operations is used if we are interested in only certain columns of a table?
Option A:	Projection
Option B:	Selection
Option C:	Union
Option D:	Join
17.	What type of join is needed when you wish to include rows that do not have matching values?
Option A:	Equi-join
Option B:	Natural join
Option C:	Outer join
Option D:	Inner join
18.	A _____ consists of a sequence of query and/or update statements.
Option A:	Transaction
Option B:	Commit
Option C:	Rollback
Option D:	Transition state
19.	In the _____ normal form, a composite attribute is converted to individual attributes.
Option A:	First
Option B:	Second
Option C:	Third
Option D:	Fourth
20.	AS' clause is used in SQL for
Option A:	Selection operation
Option B:	Rename operation
Option C:	Join operation
Option D:	Projection operation

Q2 A	**Solve any Two**	**5 marks each**

i.	Differentiate between file system and database system with an example.
i.	Draw the state transition diagram and explain the meaning of each state in short.
ii.	Write down the SQL queries for the following case Emp (Emp_id, Emp_name, Emp_city, Dept_id) Dept (Dept_id, Dept_name, Dept_loc) Works_on (Emp_id, Dept_id, Emp_salary) a) Find the name of an employee with Emp_id=9; b) Find the name of department in which employee living city is same as Dept_loc. c) Give 10% raise in salary to all employee working in Mumbai location.
iii.	Explain role of the Database Administrator.
Q2 B	**Solve any One** **10 marks each**
i.	Explain the following Relational operator with the help of the suitable example. 1. Select (σ) 2. Project(π) 3. Rename(ρ) 4. Cartesian product(X)
ii.	What do you understand by Joins? Explain following terms with example a. Theta join b. Natural join c. Left outer join d. Right outer join e. Full outer join

Q3. A	**Solve any Two** **5 marks each**
i.	What are ACID properties in DBMS? Explain in detail.
ii.	What do you understand by the concurrent execution of the transaction? Mention any two advantages of the concurrency.
iii.	What do you understand by schedule? Give an example of a serializable schedule.
Q3. B	**Solve any One** **10 marks each**
i.	Explain the following terms with a proper example. a. Relation b. Entity c. Domain d. Attribute *e.* Weak entity set
ii.	Explain the following with suitable example. 1. Time stamp-based concurrency protocol and 2. 2PL based concurrency protocol.