University of Mumbai

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: TE Semester V

Course Code:CSC502 and Course Name: Database Management system

Time: 2 hour Max. Marks: 80

==========

Q1. Total 40M	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks [02 marks each]**
1.	Characteristics of an entity is
Option A:	Relation
Option B:	Attribute
Option C:	Parameter
Option D:	Constraint
2.	Which is the advantage of database
Option A:	Prevents minimization of data
Option B:	Restricts authorized access
Option C:	Duplicate data
Option D:	Prevents Data redundancy
3.	A level that describes data stored in a database and the relationships among the data.
Option A:	Physical
Option B:	Logical
Option C:	User
Option D:	View
4.	An entity set that does not have sufficient attributes to form a primary key is termed a _____
Option A:	Strong entity set
Option B:	Variant set
Option C:	Weak entity set
Option D:	Variable set
5.	Let E be an entity set in a relationship set R. If every entity in E participates in at least one relationships in R, Then the participation of E in R is _____
Option A:	Partial
Option B:	Total
Option C:	Complete
Option D:	Incomplete
6.	Which of the following is the specialization that permits multiple sets Superclass specialization
Option A:	Superclass specialization

Option B:	Disjoint specialization
Option C:	Overlapping specialization
Option D:	Subclass specialization
7.	What action does ⋈ operator perform in relational algebra
Option A:	Output specified attributes from all rows of the input relation and remove duplicate tuples from the output
Option B:	Outputs pairs of rows from the two input relations that have the same value on all attributes that have the same name
Option C:	Output all pairs of rows from the two input relations (regardless of whether or not they have the same values on common attributes)
Option D:	Return rows of the input relation that satisfy the predicate
8.	The_____ operation allows the combining of two relations by merging pairs of tuples, one from each relation, into a single tuple.
Option A:	Select
Option B:	Join
Option C:	Union
Option D:	Intersection
9.	What is a foreign key?
Option A:	A foreign key is a primary key of a relation which is an attribute in another relation
Option B:	A foreign key is a superkey of a relation which is an attribute in more than one other relations
Option C:	A foreign key is an attribute of a relation that is a primary key of another relation
Option D:	A foreign key is the primary key of a relation that does not occur anywhere else in the schema
10.	With SQL, how do you select all the records from a table named “Persons” where the value of the column “FirstName” ends with an “a”?
Option A:	SELECT * FROM Persons WHERE FirstName=’a’
Option B:	SELECT * FROM Persons WHERE FirstName LIKE ‘a%’
Option C:	SELECT * FROM Persons WHERE FirstName LIKE ‘%a’
Option D:	SELECT * FROM Persons WHERE FirstName=’%a%’
11.	Which of the following are TCL commands?
Option A:	UPDATE and TRUNCATE
Option B:	SELECT and INSERT
Option C:	GRANT and REVOKE
Option D:	ROLLBACK and SAVEPOINT
12.	Which SQL function is used to count the number of rows in a SQL query?
Option A:	COUNT()
Option B:	NUMBER()
Option C:	SUM()
Option D:	COUNT(*)
13.	_____removes all rows from a table without logging the individual row

	deletions.
Option A:	DELETE
Option B:	REMOVE
Option C:	DROP
Option D:	TRUNCATE
14.	Find all the cities with temperature, condition and humidity whose humidity is in the range of 63 to 79.
Option A:	SELECT * FROM weather WHERE humidity IN (63 to 79)
Option B:	SELECT * FROM weather WHERE humidity NOT IN (63 AND 79)
Option C:	SELECT * FROM weather WHERE humidity BETWEEN 63 AND 79
Option D:	SELECT * FROM weather WHERE humidity NOT BETWEEN 63 AND 79
15.	Empdt1(empcode, name, street, city, state, pincode) For any pincode, there is only one city and state. Also, for given street, city and state, there is just one pincode. In normalization terms, empdt1 is a relation in
Option A:	1 NF only
Option B:	2 NF and hence also in 1 NF
Option C:	3NF and hence also in 2NF and 1NF
Option D:	BCNF and hence also in 3NF, 2NF and 1NF
16.	A _____ is an indirect functional dependency, one in which X->Z only by virtue of X->Y and Y->Z.
Option A:	Multivalued Dependencies
Option B:	Join Dependency
Option C:	Trivial Functional Dependency
Option D:	Transitive Dependencies
17.	Which of the following disallows both dirty reads and nonrepeatable reads, but allows phantom reads?
Option A:	Read committed
Option B:	Read uncommitted
Option C:	Repeatable read
Option D:	Serializable
18	Which of the following scenarios may lead to an irrecoverable error in a database system ?
Option A:	A transaction writes a data item after it is read by an uncommitted transaction
Option B:	A transaction reads a data item after it is read by an uncommitted transaction
Option C:	A transaction reads a data item after it is written by a committed transaction
Option D:	A transaction reads a data item after it is written by an uncommitted transaction
19.	<table><tr><th>T1</th><th>T2</th></tr><tr><td>READ (A);</td><td>READ (A); A=A+50; WRITE(A)</td></tr></table>

	A=A+100; WRITE(A) Given schedule is _____ schedule.
Option A:	Serial
Option B:	Precedence
Option C:	Dirty read
Option D:	Consistent read
20.	A schedule is given as r 1(a),w1(a),r1(b),r2(b),w2(b),w1(b) Applying conflict serializability rule given schedule is _____ serializable.
Option A:	Less conflict
Option B:	Average conflict
Option C:	Not conflict
Option D:	Conflict

Q2 **Total 20 M**	**Solve any Two Questions out of Three** **10 marks each**
A	Describe the overall architecture od DBMS with diagram
B	Construct an ER diagram for a Hospital with a set of patients and the set of medical doctors associated with each patient a record of various text and examination conducted.
C	Explain different Integrity constraints with examples.

Q3 **Total 20 M**	**Solve any Two Questions out of Three** **10 marks each**
A	Employee(eid, ename, address, city) Works(eid, cid, salary) Company(cid, cname, city) 1. Modify database so that Nikhil now lives in Delhi. 2. Fid employees who live in same city as the company for which they work. 3. Give all employees of "ABC Corporation" where there is increase in salary by 15%. 4. Find the names of all employees, company name and city of residence such that employee name belongs with 'S'. 5. Delete all tuples in works relation for employees of small bank corporation.
B	What is Normalization? Explain 1NF, 2NF,3NF and BCNF with suitable examples
C	What is deadlock? Explain causes of deadlocks? Explain the deadlock prevention methods used in DBMS.