

Program: **Information Technology**

Curriculum Scheme: Rev2019

Examination: SE Semester III

Course Code: **ITC303** and Course Name: **Database Management System**

Time: 2 hour 30 minutes

Max. Marks: 80

Q1.	Choose the correct option for the following questions. All the questions are compulsory and carry equal marks (20 Marks)
1.	Generalization and specialization lattices are classified as _____
Option A:	Multiple aggregation
Option B:	Single inheritance
Option C:	Single aggregation
Option D:	Multiple inheritance
2.	If E1 and E2 are Relational Algebra expressions. Then which of the following is not a Relational Algebra expression?
Option A:	$E1 \cup E2$
Option B:	$E1 - E2$
Option C:	$E1 / E2$
Option D:	$E1 \times E2$
3.	An Entity set that does not have sufficient attribute to form primary key is called _____
Option A:	Weak Entity
Option B:	Strong Entity
Option C:	Simple Entity
Option D:	Composite Entity
4.	An advantages of DBMS are _____
Option A:	Decrease in data redundancy,more security,data independence
Option B:	Data dependency,No data sharing, increase in data redundancy
Option C:	Increase in data redundancy, data dependency,less security
Option D:	No data sharing,data dependency,data isolation
5.	The attribute Emp_Name can be described as fname, mname and lname. This type of attribute is called _____.
Option A:	Simple attribute
Option B:	Composite attribute
Option C:	Multivalued attribute
Option D:	Derived attribute
6.	A table is in BCNF if it is in 3NF and if every determinant is a _____ key.
Option A:	Dependent
Option B:	Normal

Option C:	Candidate
Option D:	Both Normal and Candidate
7.	If a transaction does not modify the database until it has committed, it is said to use the _____ technique.
Option A:	Deferred-modification
Option B:	Late-modification
Option C:	Immediate-modification
Option D:	Undo
8.	The “all-or-none” property is commonly referred to as _____
Option A:	Isolation
Option B:	Durability
Option C:	Atomicity
Option D:	Independence
9.	With SQL, how do you select all the records from a table named "Persons" where the value of the column "FirstName" is "Peter"?
Option A:	SELECT * FROM Persons WHERE FirstName='Peter';
Option B:	SELECT [all] FROM Persons WHERE FirstName LIKE 'Peter';
Option C:	SELECT [all] FROM Persons WHERE FirstName= 'Peter';
Option D:	SELECT * FROM Persons WHERE FirstName<>'Peter';
10.	If matching tuples are not found, the kind of OUTER JOIN operation which keeps all the tuples of first and second relation is classified as _____
Option A:	LEFT OUTER JOIN
Option B:	FULL OUTER JOIN
Option C:	HALF OUTER JOIN
Option D:	DOWNWARD JOIN

Q2	Solve any Two Questions out of Three	10 marks each
A	Explain steps to map ER/EER model to Relational Database Model with example.	
B	Explain different forms of Normalization with the help of examples.	
C	Draw and explain DBMS system architecture.	

Q3	Solve any Two Questions out of Three	10 marks each
A	Explain different types of operations in Relational Algebra with examples.	
B	Consider the following schema for College Library. Student(Roll_no,Name,Branch) Book(ISBN,Title,Author,Publisher) Issue(Roll_no,ISBN,Date_Of_Issue) Write SQL queries for the following statements. i. List Roll_no and Name of all students of IT branch ii. Find the name of the students who have issued the book of publisher 'abc'. iii. List Title of the books and their author issued by 'John' iv. List title of books issued on or before '31 st May 2021'	
C	Construct a dependency diagram of relation R and normalize it upto the BCNF normal form. <div style="text-align: center;"> </div>	

Q4	Solve any Four Questions out of Six	5 marks each															
A	Explain Data Independence.																
B	Draw EER diagram for Hospital Management System.																
C	Explain different keys in DBMS.																
D	Explain Conflict Serializability with the help of an example.																
E	Explain Views with example.																
F	Evaluate all the functional dependencies satisfied by the relation. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>B1</td> <td>C1</td> </tr> <tr> <td>A1</td> <td>B1</td> <td>C2</td> </tr> <tr> <td>A2</td> <td>B1</td> <td>C1</td> </tr> <tr> <td>A2</td> <td>B1</td> <td>C3</td> </tr> </tbody> </table>		A	B	C	A1	B1	C1	A1	B1	C2	A2	B1	C1	A2	B1	C3
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