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

Program: Computer Engineering
Curriculum Scheme: Rev2016
Examination: Third Year Semester: V

Course Code: CSC502 Course Name: Database Management System
Time: 2 hour Max. Marks: 80

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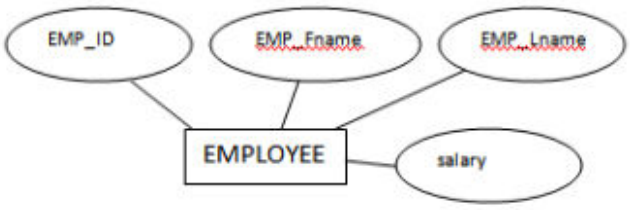
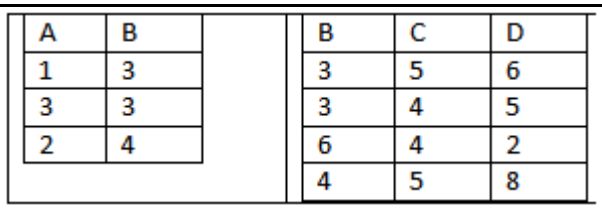
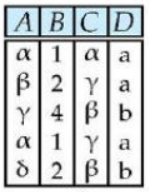
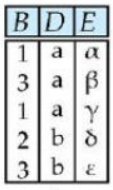
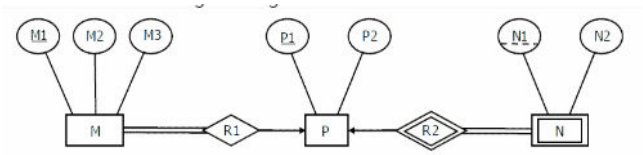
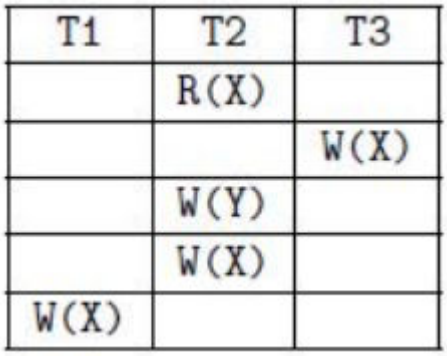
Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Hiding the details of data of how it is stored and maintained is termed as .....
Option A:	Data Hiding
Option B:	Data Abstraction
Option C:	Data Isolation
Option D:	Data Integrity
2.	Which user operates at logical level of Data Abstraction?
Option A:	DBA
Option B:	Programmer
Option C:	Naive User
Option D:	System Analyst
3.	Identify the correct mapping of below ER fragment 
Option A:	EMPLOYEE(EMP_ID, EMP_Fname, EMP_Lname, salary)
Option B:	EMPLOYEE(EMP_ID, salary), EMPLOYEE(EMP_Fname, EMP_Lname)
Option C:	EMPLOYEE(EMP_ID, salary), EMPLOYEE_name(EMP_ID,EMP_Fname, EMP_Lname)
Option D:	Emp(emp_id, emp_name)

4.	Consider a situation in which attribute AGE value is calculated based on the attribute DATE-OF-BIRTH. Here attribute AGE is --------
Option A:	Compsite Attribute
Option B:	Multivalued Attribute
Option C:	Simple Attribute
Option D:	Derived Attribute
5.	An entity set that does not have sufficient attributes to form a primary key is termed as -------
Option A:	Weak Entity
Option B:	Strong Entity
Option C:	Simple Entity
Option D:	Derived Entity
6.	 Consider the relations R and S Compute R ⋈ S. Which is the correct resultant?
Option A:	1,3,4,2
Option B:	1,4,5,8
Option C:	2,4,5,8
Option D:	3,3,4,2
7.	Consider the relation and identify the operation performed on them

	 r  s \n operation on these two relations produce the following output: 
Option A:	r - s
Option B:	r U s
Option C:	r natural join s
Option D:	r cartesian product s
8.	How many relations will be generated from the given ER Diagram. 
Option A:	2
Option B:	3
Option C:	4
Option D:	5

9.	Consider the emp_project table. emp_project pname | pnumber | plocation | dnum ProductA | 1 | New York | 5 ProductB | 2 | Tempe | 5 ProductC | 3 | Wilmington | 5 ERP | 10 | Delaware | 4 Reorg | 20 | Wilmington | 1 Newbee | 30 | Delaware | 4 Identify the correct query for the following output. emp_project pname ERP Newbee
Option A:	Select pname from TABLE emp_project where dnum=4
Option B:	Select pname from emp_project where dnum=4
Option C:	Select pname from TABLE emp_project FOR dnum=4
Option D:	Select pname from emp_project FOR dnum=4
10.	SQL Command to remove rows from a STUDENT TABLE is .....
Option A:	DROP
Option B:	UPDATE
Option C:	DELETE
Option D:	REMOVE
11.	Which of the following are TCL Commands?
Option A:	Select & Insert
Option B:	Update & Truncate
Option C:	Grant & Revoke
Option D:	Rollback & Savepoint
12.	Trigger which executes only once for a transaction is called as -------
Option A:	Row Level Trigger
Option	Simple Trigger

B:	
Option C:	Statement Level Trigger
Option D:	Complex Trigger
13.	Department Relation is changed to Department_new. What is this transformation called as? department dname | dnumber | m_ssl | start_date | dep_locations Consultancy | 15 | 333 | 1988-01-09 | New York, Delaware, Wilmington Finance | 4 | 987 | 1989-01-09 | Tempe Head Office | 1 | 888 | 1990-01-09 | Florida department_new dname | dnumber | m_ssl | start_date | dep_locations Consultancy | 15 | 333 | 1988-01-09 | New York Consultancy | 15 | 333 | 1988-01-09 | Delaware Consultancy | 15 | 333 | 1988-01-09 | Wilmington Finance | 4 | 987 | 1989-01-09 | Tempe Head Office | 1 | 888 | 1990-01-09 | Florida
Option A:	1NF
Option B:	2NF
Option C:	3NF
Option D:	4NF
14.	If Relation R(P, Q, R, S, T) has following functional dependencies: PQ --> R PT --> S S --> Q Identify appropriate candidate key for relation R
Option A:	PQ
Option B:	PR
Option C:	PT
Option D:	PS
15.	Which one of the following statements about normal forms is FALSE?
Option A:	BCNF is stricter than 3NF
Option B:	Lossless, dependency-preserving decomposition into 3NF is always possible
Option C:	Lossless, dependency-preserving decomposition into BCNF is always possible
Option	Any relation with two attributes is in BCNF

D:	
16.	Consider the gven set of dependencies (A --> BC, CD --> E, B --> D, E --> A) Identify the correct canonical cover for the given set.
Option A:	(A --> BC, CD --> E, A --> B, E --> A)
Option B:	(A --> BC, CD --> E, B --> D, E --> A)
Option C:	(A --> BC, CD --> E, D --> E, E --> A)
Option D:	(A --> BC, A --> B, B --> D, E --> A)
17.	Which of the following is not ACID property of transaction?
Option A:	Consistency
Option B:	Integrity
Option C:	Atomicity
Option D:	Durability
18.	Consider the following schedule  Choose correct option for the above transactions schedule

T1	T2	T3
	R(X)	
		W(X)
	W(Y)	
	W(X)	
W(X)		

Option A:	View serializable
Option B:	Conflict Serializable
Option C:	Both View and Conflict Serializable
Option D:	Conflict Serializable but not View Serializable
19.	Isolation property of transaction ensures
Option A:	Recovery Management
Option B:	Concurrency Control System
Option	Security Management System

C:	
Option D:	Query Optimization techniques
20.	When a transaction completes the execution of its final statement, it enters a state. What is the name of this state?
Option A:	Partially Committed State
Option B:	Committed State
Option C:	Failed State
Option D:	Aborted State

Q2. (20 Marks)	**Solve any Four out of Six. 5 marks each**
A	Explain different types of user in database system.
B	Explain ACID Properties of transactions
C	Explain different types of Integrity Constraints with example
D	Difference between: File Processing System & Database Management System
E	Explain Log Based Recovery
F	Explain following relational algebra operations with suitable example: A. Project B. Selection C. Union D. Cartesian Product

Q3. (20 Marks)	**Solve any Two Questions out of Three 10 marks each**
A	Explain DBMS Architecture in detail
B	What is Normalization? Explain 1NF, 2NF, 3NF with suitable example.
C	Construct ER Diagram for Library Management System and convert the same into relational model.