

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: TE Electronics and Telecommunication Engineering

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: ECCDLO6023

Course Name: Database Management Systems

Time: 1 hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	In relational model, cardinality is referred as
Option A:	number of tuples
Option B:	number of attributes
Option C:	number of tables
Option D:	number of constraints
Q2.	which of the following is not a data model in DBMS
Option A:	Hierarchical
Option B:	object
Option C:	network
Option D:	Harvard
Q3.	The entity relationship set is represented in E-R diagram as
Option A:	Square
Option B:	Rectangle
Option C:	Diamond
Option D:	Circle
Q4.	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:	Total
Option B:	Partial
Option C:	Complete
Option D:	Incomplete
Q5.	A special marker used in DBMS to indicate no value for data is
Option A:	Null

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Option B:	Empty
Option C:	Zero
Option D:	Full
Q6.	A table is in the _____ if only candidate keys are the determinants.
Option A:	Functional dependency
Option B:	Transitive dependency
Option C:	4 NF
Option D:	BCNF
Q7.	Dependency preservation is not guaranteed in
Option A:	BCNF
Option B:	3 NF
Option C:	4 NF
Option D:	DKNF
Q8.	The file organization that provides very fast access to any arbitrary record of a file is:
Option A:	Ordered file
Option B:	Unordered file
Option C:	Hashed file
Option D:	B-tree
Q9.	The Entity Customer has three candidate keys: a) CustId b) Email and c) ContactNo. Suggest the best primary key for this entity.
Option A:	CustId
Option B:	Email
Option C:	ContactNo
Option D:	CustId and ContactNo
Q10.	The operators in SELECT operation statement such as 'and' , 'or' and 'not' are classified as

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Option A:	Boolean operators
Option B:	Tuple operators
Option C:	String operators
Option D:	Insertion operators
Q11.	In the EQUIJOIN condition, the operation which is used to avoid superfluous attribute is classified as
Option A:	ALPHA JOIN
Option B:	NATURAL JOIN
Option C:	UNNATURAL JOIN
Option D:	THETA JOIN
Q12.	An expression in the domain relational calculus is of the form
Option A:	$\{P(x_1, x_2, \dots, x_n) \mid \langle x_1, x_2, \dots, x_n \rangle\}$
Option B:	$\{x_1, x_2, \dots, x_n \mid x_1, x_2, \dots, x_n\}$
Option C:	$\{x_1, x_2, \dots, x_n \mid \langle x_1, x_2, \dots, x_n \rangle\}$
Option D:	$\{\langle x_1, x_2, \dots, x_n \rangle \mid P(x_1, x_2, \dots, x_n)\}$
Q13.	Find the names of all instructors in the Physics department together with the course id of all courses they teach:
Option A:	$\{\langle c \rangle \mid \exists s (\langle c, a, s, y, b, r, t \rangle \in \text{section} \wedge s = \text{"Fall"} \wedge y = \text{"2009"} \vee \exists u (\langle c, a, s, y, b, r, t \rangle \in \text{section} \wedge s = \text{"Spring"} \wedge y = \text{"2010"}))\}$
Option B:	$\{\langle n, c \rangle \mid \exists i, a (\langle i, c, a, s, y \rangle \in \text{teaches} \wedge \exists d, s (\langle i, n, d, s \rangle \in \text{instructor} \wedge d = \text{"Physics"}))\}$
Option C:	$\{\langle n \rangle \mid \exists i, d, s (\langle i, n, d, s \rangle \in \text{instructor} \wedge s > 80000)\}$
Option D:	$\{\langle i, n, d, s \rangle \mid \langle i, n, d, s \rangle \in \text{instructor} \wedge s > 80000\}$
Q14.	Which of the following operator select a range of data between two values?
Option A:	IN
Option B:	BETWEEN
Option C:	%

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Option D:	OR
Q15.	What is default value of any column when it is missing or not known?
Option A:	NULL
Option B:	Empty
Option C:	Zero
Option D:	Garbage Value
Q16.	What is an SQL virtual table that is constructed from other tables?
Option A:	Just another table
Option B:	A view
Option C:	A relation
Option D:	Query results
Q17.	Which of the following is the true about simple view
Option A:	Simple view contain group by, distinct clause.
Option B:	It can contain groups of data.
Option C:	We can use group functions.
Option D:	Contains only one single base table
Q18.	Drop Table cannot be used to drop a table referenced by a _____ constraint.
Option A:	Local Key
Option B:	Primary Key
Option C:	Composite Key
Option D:	Foreign Key
Q19.	The database system must take special actions to ensure that transactions operate properly without interference from concurrently executing database statements. This property is referred to as
Option A:	Atomicity
Option B:	Durability
Option C:	Isolation

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Option D:	Consistency
Q20.	A schedule is _____ if it is conflict equivalent to a serial schedule.
Option A:	Conflict serializable
Option B:	Conflicting
Option C:	Non serializable
Option D:	Non Conflicting
Q21.	A _____ ensures that any conflicting read and write operations are executed in timestamp order
Option A:	Organizational protocol
Option B:	802-11 protocol
Option C:	Timestamp execution protocol
Option D:	Timestamp ordering protocol
Q22.	If a transaction has obtained a _____ lock, it can read but cannot write on the item
Option A:	Exclusive mode
Option B:	Shared mode
Option C:	Read only mode
Option D:	Write only mode
Q23.	<p>Consider the following log sequence of two transactions on a bank account, with initial balance 12000, that transfer 2000 to a mortgage payment and then apply a 5% interest.</p> <ol style="list-style-type: none"> 1. T1 start 2. T1 B old=12000 new=10000 3. T1 M old=0 new=2000 4. T1 commit 5. T2 start 6. T2 B old=10000 new=10500 7. T2 commit <p>Suppose the database system crashes just before log record 7 is written. When the system is restarted, which one statement is true of the recovery procedure?</p>
Option A:	We must redo log record 6 to set B to 10500
Option B:	We can apply redo and undo operations in arbitrary order because they are

University of Mumbai
Examination 2020 under cluster 4 (PCE)

	idempotent
Option C:	We need not redo log records 2 and 3 because transaction T1 has committed.
Option D:	We must undo log record 6 to set B to 10000 and then redo log records 2 and 3.
Q24.	Which of the following occurs when one transaction reads a changed record that has not been committed to the database?
Option A:	Non repeatable read
Option B:	Phantom read
Option C:	Dirty read
Option D:	Consistent read
Q25.	A special redo-only log record $\langle T_i, X_j, V_1 \rangle$ is written to the log, where V_1 is the value being restored to data item X_j during the rollback. These log records are sometimes called
Option A:	Log records
Option B:	Records
Option C:	Compensation log records
Option D:	Compensation redo records

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	D
Q3.	C
Q4	A
Q5	A
Q6	D
Q7	A
Q8.	C
Q9.	A
Q10.	A
Q11.	B
Q12.	D
Q13.	B
Q14.	B
Q15.	A
Q16.	B
Q17.	D
Q18.	D
Q19.	C
Q20.	A
Q21.	D
Q22.	B
Q23.	D
Q24.	C
Q25.	C