University of Mumbai

Examination 2020 under cluster 7 (Lead College: SSJCOE)

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

Program: **Information Technology**
Curriculum Scheme: Rev-2019

Examination: SE — Semester III
Course Code: ITC303 — 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.	A relational database consists of a collection of
Option A:	keys
Option B:	table
Option C:	schema
Option D:	record
2.	_____ is not a level of data abstraction.
Option A:	Critical Level
Option B:	Logical Level
Option C:	Physical Level
Option D:	View Level
3.	File code which developer add to the file and limit access to new user is called
Option A:	file code
Option B:	access code
Option C:	code protection
Option D:	physical code
4.	E-R model use to represent weak entity set
Option A:	Doubly outlined rectangle
Option B:	Circle
Option C:	Dotted rectangle
Option D:	Diamond
5.	The constraints of disjoint and completeness in specialization and generalization are usually
Option A:	calculated
Option B:	default value
Option C:	dependent
Option D:	independent

6.	The relational algebra is _____.
Option A:	Data Definition Language
Option B:	Non Procedural Language
Option C:	Meta Language
Option D:	Procedural Language
7.	The natural join is equal to :
Option A:	Cartesian Product
Option B:	Combination of Union and Cartesian product
Option C:	Combination of selection and Cartesian product
Option D:	Combination of projection and Cartesian product
8.	How the data redundancy can be reduced?
Option A:	By adding many constraints
Option B:	Use of appropriate Normal Forms
Option C:	Using keys
Option D:	Using complex database design
9.	The notation X -> Y is used to denote
Option A:	Non-transitive dependency
Option B:	Transitive dependency
Option C:	Functional dependency
Option D:	Reflexive dependency
10.	Which process is performed by the normalization to remove data redundancy from relations?
Option A:	Merge relations into one
Option B:	Add new columns in existing relations
Option C:	Remove columns from existing relations
Option D:	Decompose relations into smaller relations
11.	Good relational database design can be obtained by-
Option A:	Normalization
Option B:	Changing functional requirements
Option C:	Complex design of the database
Option D:	Adding keys on a database
12.	Which join refers to join records from the right table that have no matching key in the left table are include in the result set:
Option A:	Left outer join
Option B:	Right outer join
Option C:	Full outer join
Option D:	Half outer join
13.	To include integrity constraint in an existing relation use :
Option A:	Create table
Option B:	Modify table
Option C:	Alter table
Option D:	Drop table

14.	UPDATE instructor_____ salary=salary*1.05; Fill in blank with the correct keyword to update the instructor relation.
Option A:	Where
Option B:	Set
Option C:	In
Option D:	Select
15.	Which of the SQL statements is correct ?
Option A:	SELECT Username AND Password FROM Users
Option B:	SELECT Username, Password FROM Users
Option C:	SELECT Username, Password WHERE Username = 'user1'
Option D:	SELECT Username AND Password FROM Users where Username=’user1’
16.	Which operator performs pattern matching ?
Option A:	Between operator
Option B:	Exists operator
Option C:	Like operator
Option D:	Equal operator
17.	Primary Key, Referential Integrity, Check constraint are examples of-
Option A:	Key Constraints
Option B:	Security Constraints
Option C:	Integrity Constraints
Option D:	Transaction Constraints
18.	When a transaction is said to be in a Partially committed state?
Option A:	After all statements in transaction are successfully completed
Option B:	After the half of statements has been executed
Option C:	After the first statement has been executed
Option D:	After the final statement has been executed
19.	Which component of DBMS handles the database consistency?
Option A:	Transaction Manager
Option B:	Authorization & Integrity manager
Option C:	Concurrency-control manager
Option D:	Buffer Manager
20.	What is starvation?
Option A:	Selection of a victim based on size
Option B:	Selection of a victim based on priority
Option C:	Selection of a victim based on cost factor
Option D:	Selection of a victim based on time

Q2. **(20 Marks)**	**Solve any Four out of Six** **5 marks each**
A	Differentiate primary key and secondary key with suitable examples.
B	Write a Note on Functions of Database Administrator (DBA).
C	Explain the following Relational algebra operations. (i)Natural Join (ii) Assignment
D	Discuss functions and procedures in SQL.
E	What undesirable dependencies are avoided when a relation is in 3NF?
F	Define and explain a serial schedule.

Q3. **(20 Marks)**	**Solve any Four out of Six** **5 marks each**
A	Construct an E-R diagram for a car-insurance company whose customers own one or more cars each. Each car has associated with it zero to any number of recorded accidents.Convert this E-R diagram into a schema.
B	Discuss steps for transforming ER Diagram to Relation .
C	Explain different types of integrity constraints in SQL .
D	Justify the need for normalization.
E	Draw and explain DBMS structure.
F	Illustrate Two phase locking protocol with suitable case study.

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