University of Mumbai

Examination June 2021

Examinations Commencing from 1st June 2021

Program: Computer Engineering

Curriculum Scheme: Rev2016

Examination: TE Semester VI

Course Code: CSDLO6022 and Course Name: Adv. Database System

Time: 2 hours Max. Marks: 80

==========

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	The type of file which provides fast access to records under certain search conditions. This organization is usually called a
Option A:	Heap File
Option B:	Hash File
Option C:	Sequential File
Option D:	Direct File
2.	In Multilevel Indexing the index which leaves some space in each of its blocks for inserting new entries is called
Option A:	Dynamic Multilevel Index
Option B:	Dense Index
Option C:	Primary Index
Option D:	Clustering Index
3.	When the hash field value of a record that is being inserted hashes to an address that already contains a different record. It is called as
Option A:	Indexing
Option B:	Hashing
Option C:	Collision
Option D:	Chaining
4.	Semi -join is generally used for unnesting ----------subqueries.
Option A:	Not In
Option B:	All
Option C:	Not Exists
Option D:	Exists
5.	The processor that has task of running the query code, whether in compiled or interpreted mode, to produce query result.
Option A:	Runtime Database Processor
Option B:	Query Graphic Processor
Option C:	Parser Runtime Processor
Option D:	Query Optimizer Processor
6.	The algorithms that are suitable for sorting large files of records stored on disk that do not fit entirely in main memory
Option A:	Internal Sorting

Option B:	Secondary sorting
Option C:	Parser Sorting
Option D:	external Sorting
7.	Which type of expression is represented by Query Graph?
Option A:	Tuple Relational Calculus
Option B:	Simple Expressions
Option C:	Relational Algebra
Option D:	Relational Calculus
8.	The real use of the Two-phase commit protocol is _____
Option A:	Deadlock will not occur.
Option B:	Concurrency control can be avoided.
Option C:	Atomicity, i.e, all-or-nothing commits at all sites.
Option D:	Both Availability and Robustness.
9.	In log based recovery, log is a sequence of
Option A:	Filter
Option B:	Records
Option C:	Blocks
Option D:	Numbers
10.	In Distributed Database if transaction can read, but cannot update that data item. It is called as
Option A:	Read Lock
Option B:	Write Lock
Option C:	Upgradation Lock
Option D:	Down gradation Lock
11.	The Probability that the system can continue its normal execution according to the specification at a given point in time in spite of failures.
Option A:	Availability
Option B:	Scalability
Option C:	Reliability
Option D:	Check pointing
12.	‘enum’ keyword used to..
Option A:	Define data type range
Option B:	Define a class range
Option C:	Define relationship range
Option D:	Define a range for an attribute
13.	Which is not a consistency level of Document Database?
Option A:	Bounded-staleness
Option B:	Elastic
Option C:	Session
Option D:	Strong
14.	The Most Well-Known object oriented Databases
Option A:	SimpleDB

Option B:	eXist
Option C:	BaseX
Option D:	Objectstore
15.	The characteristic of Multimedia system
Option A:	High storage
Option B:	Both High storage and High data rates
Option C:	High data rates
Option D:	Low Storage
16.	Which data is primarily managed by vertical application in Mobile database?
Option A:	Individual
Option B:	Shared
Option C:	Public
Option D:	Private
17.	XML stands for
Option A:	Extensible Markup Language
Option B:	Extended Markup Language
Option C:	Extensive Markup Language
Option D:	Exhausted Markup Language
18.	Which is not a valid access control mechanism?
Option A:	Discretionary Access Control
Option B:	Mandatory Access Control
Option C:	Role Based Access Control
Option D:	Subjective Access Control
19.	In statistical database, a set of tuples of a relation (table) that satisfy some selection condition called as
Option A:	Interinstance
Option B:	Population
Option C:	Infer
Option D:	Integrity
20.	Time based SQL injection attack is called..
Option A:	Initial Exploitation
Option B:	Inline Comments
Option C:	Quick detection
Option D:	Blind SQL Injection

Q2	**Solve any Four out of Six** **5 marks each**
A	Compare B-Tree and B+ Tree with respect to their structure, advantages and disadvantages.
B	Explain in detail Communication of Two Phase Commit Protocol.
C	Explain Two Phase Locking Protocol in Distributed Database.
D	How to manage continuous data in Spatial data models?
E	Explain how authorization will be a Database Security issue? Give alternate solution in authorization.
F	Explain FLWR expression in XML with an example.

Q3	**Solve any Two Questions out of Three** **10 marks each**
A	Consider the following recursive DTD. <!DOCTYPE parts [<!ELEMENT parts (part+)> <!ELEMENT part (name, subpartinfo*)> <!ELEMENT subpartinfo (part, quantity)> <!ELEMENT name (#PCDATA)> <!ELEMENT quantity (#PCDATA)>] > **a.** Give a small example of data corresponding to the above DTD. **b.** Show how to map this DTD to a relational schema. You can assume that part names are unique, that is, wherever a part appears, its subpart structure will be the same.
B	Discuss how Multimedia Databases used in Mobile Databases? Explain what dirty data in terms of multimedia databases is. Consider any one type of multimedia databases.
C	Discuss in detail Distributed Transaction Management with an example.