Reg. No. : | | | | | | | | | | |

Question Paper Code: 44205

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Fourth Semester

Computer Science and Engineering

14UCS405 - DATABASE MANAGEMENT SYSTEMS

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Relational algebra is a _____ query language that takes two relations as input and produces another relation as output of the query.

   (a) Relational (b) Structural
   (c) Procedural (d) Non Procedural

2. An instance of a relation that satisfies all real-world constraints is called a _____of the relation.

   (a) logical instance (b) legal instance
   (c) real instance (d) perfect instance

3. A command to remove a relation form an SQL database

   (a) Delete table <table name> (b) Drop table <table name>
   (c) Erase table <table name> (d) Alter table <table name>

4. The _____SQL component of SQL allows programs to construct and submit SQL queries at runtime.

   (a) Dynamic (b) Embedded (c) Static (d) None of these

5. _____ property keeps track of old values if failure happens, it restores the old values to make transaction rolled back.

(a) Durability (b) Atomicity (c) Isolation (d) Consistency

6. If a schedule *S* can be transformed into a schedule *S'* by a series of swaps of nonconflicting instructions, we say that *S* and *S'* are

(a) conflict equivalent (b) conflict serializable
(c) conflict match (d) None of these

7. _____indices is based on the uniform distribution of values across a range of buckets

(a) Ordered (b) Hash (c) Dense (d) Sparse

8. B+tree index takes the form of a _____in which every path from the root of the tree to a leaf of the tree is of the same length.

(a) balanced tree (b) binary tree
(c) search tree (d) none of these

9. _____is a repository of information gathered from multiple sources stored under unified schema at a single site

(a) Database (b) Data mining
(c) Data Warehouse (d) Spatial database

10. People view multimedia data through various devices, collectively referred to as

(a) terminals (b) displays (c) monitors (d) None of these

PART - B (5 x 2 = 10 Marks)

11. List four significant differences between a file-processing system and a DBMS.

12. Define ACID property.

13. Classify the types of failure in database transaction.

14. Differentiate interquery and intraquery parallelism.

15. Illustrate about data classification.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Draw the system architecture of DBMS and write the purpose of each block. (8)

(ii) Construct an E-R diagram for university database with all possible entities, attributes, relations, mapping cardinalities. (8)

Or

(b) (i) Explain the different kinds of data models. (8)

(ii) Explain Boyce-Codd normal form with example and also compare BCNF and 3NF. (8)

17. (a) Explain the different algorithms used for selection operation and their associated cost. (16)

Or

(b) (i) Examine the steps involved in query processing. (8)

(ii) List out the different selection operations involved in query processing. (8)

18. (a) Identify the occurrence of deadlock in a system. Explain the two approaches to prevent deadlock. (16)

Or

(b) Discuss in detail about transaction properties and two phase commit protocol. (16)

19. (a) List the different levels in RAID and explain its features. (16)

Or

(b) Explain the architectural components of a Data warehouse. (16)

20. (a) Explain in detail the database security. (16)

Or

(b) Discuss in detail about distributed database with neat diagram. (16)

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