CBCS SCHEME

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20SCS13

First Semester M.Tech. Degree Examination, Jan./Feb. 2021
Advances in Database Management System

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Describe the following schema-based constraints:
   i) Domain constraints
   ii) Key constraints
   iii) Entity integrity constraints
   iv) Referential Integrity Constraints. **(10 Marks)**

b. Briefly explain the mapping of EER schema to an ODB schema. **(10 Marks)**

OR

2 a. Discuss the different types of update operations on a relation. Show an example of the violation of integrity constraints in each of the three types of update operations. **(10 Marks)**

b. What is the difference between persistent and transient objects? How is persistence handled in a typical OODBS? Explain with example. **(10 Marks)**

Module-2

3 a. What are the main goals of the RAID technology? How does it achieve them? **(10 Marks)**

b. What is Buffering? Discuss the responsibilities of the buffer managers buffer replacement strategies. **(10 Marks)**

OR

4 a. Discuss data fragmentation and replication method of storing data in a distributed database. **(10 Marks)**

b. Briefly explain concurrency control and recovery in distributed databases. **(10 Marks)**

Module-3

5 a. Discuss the characteristics of many NOSQL and explain how these systems are different from traditional SQL systems. **(10 Marks)**

b. What are the data modeling concepts used in MongoDB? What are the main CRUD operations of MongoDB? **(10 Marks)**

OR

6 a. Explain the Map and Reduce functions of the MapReduce programming model. **(10 Marks)**

b. Explain YARN Architecture with a neat diagram. **(10 Marks)**

Module-4

7 a. Explain the generalized model for active databases and oracle triggers. **(10 Marks)**

b. Write short notes on:
   i) Spatial Databases
   ii) Deductive database. **(10 Marks)**

OR

8 a. Briefly explain all the four information retrieval models. **(10 Marks)**

b. Write short notes on:
   i) Inverted Indexing
   ii) Text preprocessing. **(10 Marks)**

Module-5

9 a. Define support and confidence. Explain Apriori algorithm for finding frequent Itemsets. **(10 Marks)**

b. What is classification? Write the algorithm for Decision Tree Induction and also explain with an example. **(10 Marks)**

OR

10 a. What is Data Warehouse? Explain the architecture of Data warehouse with a neat diagram. **(10 Marks)**

b. What is multidimensional model? Explain the star schema and snowflake schema. **(10 Marks)**

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