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Total No. of Questions : 08

BCA (Sem.–4)

DATABASE MANAGEMENT SYSTEMS

Subject Code : UGCA-1922

M.Code : 79726

Date of Examination : 18-06-21

Time : 2 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any FIVE question(s), each question carries 12 marks.**

1. What is DBMS? What are the advantages and disadvantages offered by such systems as compared to file processing system? Explain.
2. Explain the three-level architecture of Database Management System with the help of diagram. Why do we need mappings between the different schema levels?
3. What is Data Model? Give comparison between Network, Hierarchical and Relational Model.
4. Compare and contrast relational algebra and relational calculus with their relative uses, merits, demerits and operators.
5. Describe the purpose of normalizing the data. State, by giving examples, the conditions that are necessary for a relation to be in INF, 2NF and 3NF.
6. Suppose that your database system has failed. Describe the database recovery process and the use of deferred-write and write-through/immediate-update techniques.
7. "A company database needs to store information about employees (identified by ssn, with salary and phone as attributes), departments (identified by dno, with dname and budget as attributes), and children of employees (with name and age as attributes). Employees work in departments; each department is managed by an employee; a child must be identified uniquely by name when the parent (who is an employee; assume that only one parent works for the company) is known. We are not interested in information about a child once the parent leaves the company. Draw an ER diagram that captures this information."
8. Discuss the architecture of a Distributed Database Management System. Within the context of a centralized DBMS, briefly explain new components introduced by the distribution of data.