Register Number……

M.E. DEGREE EXAMINATIONS: DECEMBER 2009

First Semester

COMPUTER SCIENCE AND ENGINEERING

CSE503: Advanced Database Technology

Time: Three Hours **Maximum Marks: 100**

Answer All the Questions:-

PART A (10 x 2 = 20 Marks)

1. What does Data Dictionary mean? What does it contain?
2. Differentiate a weak entity set from a strong entity set.
3. List out the reasons, why null values might be introduced into the database?
4. Why certain Functional dependencies are called trivial functional dependencies?
5. What is meant by data fragmentation and data replication in Distributed databases?
6. What functionality do you expect in a DDBMS?
7. List out any four objectives of Distributed Concurrency control.
8. Distinguish between synchronous and asynchronous replication.
9. What are the two types of OID? Explain.
10. Distinguish between overloading and overriding in object oriented DBMS

PART B (5 x 16 = 80 Marks)

11. (a) (i) Explain the component modules of a DBMS and their interactions with an architecture. (10)

(ii) Compare file processing systems with Data base systems. (6)

(OR)

(b) (i) Define Data Model. Explain different types of data models with relevant examples. (10)

(ii) Explain the fundamental Relational Algebra operations with suitable example. (6)

12. (a) (i) What is a Trigger? Give the strengths and weakness of the trigger mechanism. (8)

(ii) What are the aggregate functions in SQL? Explain with suitable example. (8)

(OR)

(b) (i) What is an Integrity constraint? What are the Integrity Constraints supported by RDBMS? Explain with an example. (8)

(ii) What is Normalization? Why is a relation that is in 3 NF generally considered good? Define BCNF with an example. (8)

13. (a) (i) Compare and contrast a DDBMS with Distributed processing and parallel Processing. (10)

(ii) What is the difference between a homogeneous and heterogeneous DDBMS? Explain. (6)

(OR)

(b) (i) Describe the component architecture for a DDBMS with a neat diagram. (8)

(ii) Write a short note on Distribution transparency. (8)

14. (a) (i) What is meant by Distributed deadlock? Explain different methods for handling deadlock detection in DDBMS. (10)

(ii) Draw and explain the various transition states for a coordinator in 2PC. (6)

(OR)

(b) (i) Discuss the various ownership models for data replication. (12)

(ii) What is a Mobile database? What are the components of Mobile database? (4)

15. (a) (i) What is meant by persistent objects and transient objects? Explain the various schemes for implementing persistence within an OODBMS. (10)

(ii) What are the three fundamental principles to be followed in orthogonal persistence? Explain. (6)

(OR)

(b) (i) Explain the various features for an OODBMS proposed by The Object Oriented Database System Manifesto. (13)

(ii) State any two advantages and disadvantages of OODBMS. (3)

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