SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E/B.Tech – CSE / IT
Title of the paper: Database Management System
Semester: V Max. Marks: 80
Sub.Code: 11506/12506 (2002/2003/2004) Time: 3 Hours
Date: 27-04-2007 Session: AN

PART – A (10 x 2 = 20)

Answer ALL the Questions

1. What are the responsibilities of Database Administrator and Database designers?
2. How the multilevel indexing improves the efficiency of searching an index file?
3. List two major problems with processing update operation expressed in terms of view.
4. State inference rules for finding the closure of Functional dependency.
5. What is two-phase locking protocol? How does it guarantee serializability?
6. How might a distributed database designed for a Local Area Network differ from one designed for Wide Area Network?
7. Give the benefits and drawbacks of pipelined parallelism.
8. What is meant by data allocation in distributed database design? What typical data units of data are replicated?
9. How does the concept of an object in object oriented model differ from the concept of an entity in the Entity Relationship model?
10. List the applications of Data mining.

PART – B (5 x 12 = 60)

Answer All the Questions

11. Explain about the notations used in ER diagram. Construct an ER diagram for a hospital with a set of patients and a set of

medical doctors. Associate with each patient a log of various tests and examinations conducted.

Or

12. Explain the B^+ tree insertion and deletion with examples.

13. Explain about lossless join decomposition. Suppose that we decompose the schema R = (A,B,C,D,E) into (A,B,C) (A,D,E) with the following set of Functional Dependency F

    $A \rightarrow BC$

    $CD \rightarrow E$

    $B \rightarrow D$

    $E \rightarrow A$. Show that above decomposition is lossless join decompositions.

OR

14. Explain the fundamental operations in Relational Algebra.

15. Consider a relation 'r' that is to be stored in the database. Write two approaches to store this relation 'r' in a distributed database.

OR

16. Explain concurrency control based on timestamp ordering.

17. Explain in detail about the hierarchical data model with example.

OR

18. Explain about Intraquery parallelism in detail.

19. Explain Multiple inheritance with a class DAG for the bank relation example.

OR

20. Explain the architecture of Data warehouse with a neat diagram. What are the various issues to be considered while building a warehouse? Explain.