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Question Paper Code : 27392

5 Year M.Sc. DEGREE EXAMINATION, MAY/JUNE 2016

Third Semester

Computer Technology

XCS 235/10677 SW 305 – DATABASE MANAGEMENT SYSTEM

(Common to 5 year M.Sc. Information Technology/M.Sc. Software Engineering)

(Regulations 2003/2010)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Distinguish between hierarchical and network model.
2. What is meant by program data independence ?
3. Define shadowing.
4. State the difference between primary and secondary storage.
5. How data is depicted in Relational model ?
6. Name any four commercial RDBMS.
7. Draw the state diagram of a transaction.
8. List the properties that must be satisfied by a transaction.
9. What benefit does rigorous two phase locking provide ?
10. What is shadow paging ?

PART – B (5 × 16 = 80 Marks)

11. (a) (i) Explain the design of Entity Relation Diagram schema with a suitable example. (10)
(ii) Discuss the responsibilities of Database Administrator (DBA) and data base designer. (6)

OR

- (b) (i) Explain the features of different data models. (8)
(ii) Discuss the DBMS Architecture. (8)
12. (a) (i) Explain the techniques for allocating file blocks on disks. (8)
(ii) Illustrate the techniques of record deletion. (8)

OR

- (b) (i) How does multilevel indexing improve the efficiency of searching an index file ? (6)
(ii) Explain the principle of partitioned hashing and describes its limitations. (10)

13. (a) Explain decomposition using Functional Dependencies in detail.

OR

- (b) Explain why 4NF is a normal form more desirable than BCNF.

14. (a) (i) State the properties of transaction. (6)
(ii) Give the techniques of query optimization. (10)

OR

- (b) How is serializability maintained during concurrent transaction processing ? (16)

15. (a) Discuss the following :

- (i) Shadow Paging Technique. (80)
(ii) Log Based Recovery Technique. (8)

OR

- (b) (i) Write a note on database security issues. (10)
(ii) What is multiple granularity locking ? Under what circumstances is it used ? 6