Reg. No. : ☐☐☐☐☐☐☐☐☐☐

Question Paper Code: 50236

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Third Semester

Computer Science and Engineering

15UCS306 – DATABASE SYSTEM CONCEPTS

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Database system which supports majority of concurrent users is classified as

    (a) multiuser system   (b) multi-function system
    (c) multi transaction system   (d) client and disk server system

2. Which of the following is used to get back all the transactions back after rollback?

    (a) Commit   (b) Rollback   (c) Flashback   (d) Redo

3. Types of database system utilities are

    (a) backup utility   (b) performance monitoring utility
    (c) loading utility   (d) all the above

4. Consider a B+-tree in which the maximum number of keys in a node is 5. What is the minimum number of keys in any non-root node?

    (a) 1   (b) 2   (c) 3   (d) 4

5. SQL is a standard language for _____

    (a) accessing databases   (b) creating web pages
    (c) creating front ends   (d) none of these

PART - B (5 x 3 = 15 Marks)

6. Give a description on DCL commands.

7. Signify the usage of candidate and primary keys.

8. List the ACID properties of a trancastion.

9. Briefly explain about RAID level 3.

10. How do you estimate the statistics of the results of an expression?

PART - C (5 x 16 = 80 Marks)

11. (a) Define entity and relationship. Sketch and discuss ER modeling for Student Management System. (16)

Or

(b) Analyze the concepts of entity relationship model with suitable examples. (16)

12. (a) With an example, explain how you would use the features of nested queries in SQL to develop complex queries. (16)

Or

(b) What is BCNF? How it is different from 3NF? Prove that a relation with two attributes is always in BCNF. (16)

13. (a) What is Log-based Recovery? Illustrate the recovery with concurrent transactions in DBMS. (16)

Or

(b) Compare log-based recovery with the shadow-copy scheme in terms of their overheads, for the case when data is being added to newly allocated disk pages (in other words, there is no old value to be restored in case the transaction aborts). (16)

14. (a) Discuss the principles of various RAID levels with neat sketch. (16)

Or

(b) Analyze the Dynamic hashing in detail. (16)

15. (a) Explain selection operation with suitable examples. (16)

Or

(b) Elaborate on hash join algorithm in query processing. (16)

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