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Question Paper Code: 34205

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Computer Science and Engineering

01UCS405 – DATABASE MANAGEMENT SYSTEMS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What are the different types of data models?
2. Give an example of a relation schema R and a set of dependencies such that R is in BCNF but not in 4NF.
3. Describe a circumstance in which you would choose to use embedded SQL rather than using SQL alone.
4. List down the SQL facilities for concurrency.
5. How does the recovery manager ensure atomicity of transactions? How does it ensure durability?
6. Justify the need for Concurrency control.
7. Differentiate static hashing and dynamic hashing.
8. What benefit does strict two-phase locking provide? What are the disadvantages of it?
9. What are the types of privileges?
10. List out the steps in data mining.

PART - B (5 x 16 = 80 Marks)

11. (a) What is entity relationship model? List the various symbols in ER model. Explain with a real time example with the different functional dependencies. (16)

Or

- (b) Describe the architecture of Database system with a neat sketch. (16)

12. (a) (i) With relevant examples discuss the following in SQL.

(1) DDL (2) DML (3) DCL (4) Views (8)

- (ii) Infer the detailed explanation about embedded and dynamic SQL. (8)

Or

- (b) (i) What is DML? Explain the various DML queries with examples. (8)

- (ii) Explain embedded SQL with a brief example and necessary syntax. (8)

13. (a) With diagrams explain serializability in detail. (16)

Or

- (b) How atomicity and durability is achieved in transaction management. What is serializability? Explain its types? (16)

14. (a) Explain how *data retrieval*, *insertion* and *deletion* are done using B tree and B+ tree indices in detail with neat sketch. (16)

Or

- (b) Write detailed notes on mobile and web databases. (16)

15. (a) Explain briefly about Mandatory Access Control (MAC) and Role-based Access Control for multilevel security with neat sketch. (16)

Or

- (b) Explain about distributed database concepts. (16)