

FACULTY OF ENGINEERING**B.E. V Semester (CSE) (Main & Backlog) Examination, December 2019****Subject: Database Management Systems****Time: 3 Hours****Max. Marks: 70****Note: Answer all questions in Part – A & answer any five questions from Part – B****PART-A (20 Marks)**

1. List the Database Administrators functions.
2. Discuss Entity-Relationship design issues in brief.
3. Discuss SQL sub languages.
4. Discuss about group by clause and having clause.
5. What is Embedded SQL?
6. Define Trigger. Write syntax of Trigger.
7. Define ACID properties.
8. What is the difference between primary and secondary index?
9. What is stable storage?
10. Define recoverability.

PART-B (50 Marks)

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| 11. a) Explain the Differences between File Processing System and DBMS | 5 |
| b) Explain Database design for Banking Enterprise using E-R diagram. | 5 |
| 12. a) Explain String Operations and Aggregate functions in SQL. | 4 |
| b) Explain Fundamental and Additional Relational-Algebra Operations with suitable example. | 6 |
| 13. a) Write Dynamic SQL program to retrieve data from Database | 6 |
| b) Discuss Features of Good Relational Design. | 4 |
| 14. a) Insert the following keys in a B+ tree for the order n mentioned below | 4 |
| i) $n=3$ | |
| 5 7 23 36 2934 39 42 47 51 5559 62 | |
| b) Explain bit map indices? How they are useful in multi key access | 6 |
| 15. a) What is Concurrent control? Explain Lock based protocols. | 5 |
| b) Explain ARIES algorithm in detail | 5 |
| 16. a) Explain Log based recovery. | 6 |
| b) Explain Multiple Granularity Protocols. | 4 |
| 17. Write short notes on | |
| a) Recursive Queries | 3 |
| b) Storage Structure | 4 |
| c) Thomas write Rule | 3 |