Question Paper Code: R18A22CS05

**R18**

# ANURAG Engineering College

## (An Autonomous Institution)

## II B.Tech II Semester Supplementary Examinations, June/July-2024

## DATABASE MANAGEMENT SYSTEMS

## (COMPUTER SCIENCE AND ENGINEERING)

**Time: 3 Hours** **Max. Marks: 75**

### Section – A (Short Answer type questions) (25 Marks)

**Answer All Questions**

| | | Course Outcome | B.T Level | Marks |
|---|---|---|---|---|
| 1. | Define Database? | CO1 | L1 | 2M |
| 2. | What is the purpose of Database systems? | CO1 | L2 | 3M |
| 3. | Explain the concept of nested queries? | CO2 | L1 | 2M |
| 4. | List out basic Data types used in SQL query language? | CO2 | L2 | 3M |
| 5. | Summarize the fundamental operations in relational algebra? | CO3 | L1 | 2M |
| 6. | Compare the single valued and multivalued attributes? | CO3 | L2 | 3M |
| 7. | Illustrate atomicity with an example? | CO4 | L1 | 2M |
| 8. | What is Dense index? | CO4 | L2 | 3M |
| 9. | List out Different Lock modes? | CO5 | L1 | 2M |
| 10. | Summarize the conditions of deadlock? | CO5 | L2 | 3M |

### Section B (Essay Questions)

**Answer all questions, each question carries equal marks.** **(5 X 10M = 50M)**

| | | | | |
|---|---|---|---|---|
| 11. A) | Examine the following<br>i) View of Data ii) Data abstraction | CO1 | L3 | 10M |
| | **OR** | | | |
| B) | Identify different data models. Develop and organize the E-R model for university database | CO1 | L3 | 10M |
| 12. A) | Make use of 'group by' and 'having' clauses develop SQL queries with bank database? | CO2 | L3 | 10M |
| | **OR** | | | |
| B) | Categorize various set operations in relational algebra with examples? (Hint: Average, Minimum, Maximum, Sum, Count) | CO2 | L3 | 10M |
| 13. A) | i) Inspect different normal forms based on functional dependencies.<br>ii) List the steps to be followed to convert a relation in 3NF to BCNF? | CO3 | L3 | 5M<br>5M |
| | **OR** | | | |
| B) | Develop the closer Of the following set of functional dependencies for a relation scheme. R(A,B.C, D.E} F={A→BC,.CD→E, B→D,E→A} List out the candidate keys of R. | CO3 | L3 | 10M |
| 14. A) | Examine conflict serializable schedule? | CO4 | L3 | 10M |
| | **OR** | | | |
| B) | Discuss the transaction isolation with example? | CO4 | L3 | 10M |
| 15. A) | i) Examine Two-phrase locking protocol in detail?<br>ii) Analyze how Dead lock prevention can be achieved in database system? | CO5 | L3 | 5M<br>5M |
| | **OR** | | | |
| B) | i) Choose briefly discuss failure classification?<br>ii) Identify the steps in crash recovery in ARIES. | CO5 | L3 | 5M<br>5M |