

Hall Ticket Number:

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Code No. : 16142 AS (B)

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. VI-Semester Advanced Supplementary Examinations, July-2023

Introduction to Databases (OE-IV)

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

| Q. No.                    | Stem of the question   | M | L | CO | PO    |
|---------------------------|--|---|---|----|-------|
| 1.                        | Define a Database?   | 2 | 1 | 1  | 1,2   |
| 2.                        | Explain significance of ER diagram?  | 2 | 1 | 1  | 1,2   |
| 3.                        | List out different types of SQL commands?  | 2 | 2 | 2  | 1,2   |
| 4.                        | Give examples for 2 aggregate functions in SQL?                                      | 2 | 2 | 2  | 1,2   |
| 5.                        | Define first normal form?  | 2 | 1 | 3  | 1,2   |
| 6.                        | Specify the features of good database design?  | 2 | 2 | 3  | 1,2   |
| 7.                        | Define indexing and specify its benefits?  | 2 | 2 | 4  | 1,2   |
| 8.                        | What is static hashing, explain?   | 2 | 3 | 4  | 1,2   |
| 9.                        | What is atomicity, define?   | 2 | 1 | 5  | 1,2   |
| 10.                       | Write the importance of recoverability?  | 2 | 3 | 5  | 1,2   |
| Part-B (5 × 8 = 40 Marks) |  |   |   |    |       |
| 11. a)                    | Discuss in detail about database users and administrators?                           | 4 | 1 | 1  | 1,2   |
| b)                        | Explain the database design process with an example?                                 | 4 | 3 | 1  | 1,2   |
| 12. a)                    | Discuss about join expressions with examples?  | 4 | 3 | 2  | 1,2   |
| b)                        | What is database view? Explain it with example?                                      | 4 | 3 | 2  | 1,2   |
| 13. a)                    | Discuss briefly about how a database is decomposed based on functional dependency?   | 4 | 3 | 3  | 1,2,3 |
| b)                        | Explain with an example how to design a good relational database?                    | 4 | 3 | 3  | 1,2,3 |
| 14. a)                    | Explain in detail about B+ Tree indexed files with an example?                       | 4 | 2 | 4  | 1,2   |
| b)                        | Differentiate between static and dynamic hashing? (Give an example for hashing type. | 4 | 3 | 4  | 1,2   |

|        |  |   |   |   |       |
|--------|--|---|---|---|-------|
| 15. a) | Explain about recoverable schedules with examples.                                 | 4 | 2 | 5 | 1,2   |
| b)     | Explain in detail about transaction serializability with an example?               | 4 | 3 | 5 | 1,2,3 |
| 16. a) | Discuss in detail about database constraints?                                      | 4 | 1 | 1 | 1,2   |
| b)     | What is nested query? Explain about nested sub-queries?                            | 4 | 3 | 2 | 1,2   |
| 17.    | Answer any <i>two</i> of the following:  |   |   |   |       |
| a)     | Discuss about Armstrong's axioms with example and why are they sound and complete. | 4 | 2 | 3 | 1,2   |
| b)     | Write about the advantages of ordered indexing?                                    | 4 | 3 | 4 | 1,2   |
| c)     | What is transaction? Explain it with examples?                                     | 4 | 2 | 5 | 1,2   |

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

|      |                               |     |
|------|-------------------------------|-----|
| i)   | Blooms Taxonomy Level – 1     | 20% |
| ii)  | Blooms Taxonomy Level – 2     | 30% |
| iii) | Blooms Taxonomy Level – 3 & 4 | 50% |

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