



III B.Tech I Sem Regular End Examination, December 2022

Database Management Systems

(ECE/EEE)

Time: 3 Hours.**Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part - A, answer all questions which carries 20 marks.

3. In Part - B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

PART- A**(10*2 Marks = 20 Marks)**

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|-------|---|----|-----|-----|
| 1. a) | Write about Database schema Vs Database state | 2M | C01 | BL1 |
| b) | What is relationship Type? Give one example for binary relationship. | 2M | C01 | BL1 |
| c) | What are entity integrity constraints? | 2M | C02 | BL1 |
| d) | What are set operations on relation? | 2M | C02 | BL1 |
| e) | What is trigger? How it is useful? | 2M | C03 | BL1 |
| f) | Discuss about 1NF, 2NF, 3NF. | 2M | C03 | BL2 |
| g) | What is dirty read problem in concurrent execution of transaction. | 2M | C04 | BL1 |
| h) | What is serial schedule? Are all serial schedules are recoverable. | 2M | C04 | BL1 |
| i) | How indexing helps accessing database fast. | 2M | C05 | BL1 |
| j) | Which indexing is better for SELECT operation Hash based or Tree based? | 2M | C05 | BL1 |

PART- B**(10*5 Marks = 50 Marks)**

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|---|----|---|----|-----|-----|
| 2 | a) | Compare file system vs DBMS | 5M | C01 | BL2 |
| | b) | What is the importance of Three schema Architecture in Database design? | 5M | C01 | BL1 |

OR

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|---|----|---|----|-----|-----|
| 3 | a) | Prepare ER diagram for library Database. | 5M | C01 | BL3 |
| | b) | What is relationship? Identify all relationships in question a. | 5M | C01 | BL4 |
| 4 | a) | Why constraints to be imposed on Database design? | 5M | C02 | BL4 |
| | b) | What are entity integrity constraints? Explain. | 5M | C02 | BL1 |

OR

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|---|----|---|----|-----|-----|
| 5 | a) | What is relational algebra expression? Explain relational algebra operation SELECT. | 5M | C02 | BL1 |
| | b) | Explain Domain relational calculus. | 5M | C02 | BL1 |

- 6 a) Explain the basic SQL commands CREATE, ALTER, INSERT, DELETE 5M C03 BL4
b) What is trigger? Develop a trigger now to allow employee DOB greater than his date of join. 5M C03 BL6
- OR**
- 7 a) What is decomposition? Explain the problems related to decomposition. 5M C03 BL4
b) Explain BCNF with suitable example. 5M C03 BL3
- 8 a) What are desirable properties transactions? 5M C04 BL2
b) Differentiate serial and non serial schedule with suitable examples. 5M C04 BL3
- OR**
- 9 a) Why concurrency control mechanism required in transaction processing? Explain. 5M C04 BL3
b) Explain two phase locking technique used in concurrency control mechanism. 5M C04 BL2
- 10 a) Find out the cost of basic file operations for Tree based indexing file organization. 5M C05 BL5
b) Discuss the file operations based on hash based indexing. 5M C05 L4
- OR**
- 11 a) Explain tree based indexing file organization. 5M C05 BL2
b) Compute the cost of search and insert operations for hash based indexing file organization. 5M C05 BL5

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CO - Course Outcome

BL - Blooms Taxonomy Levels