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INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

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II B.Tech I Sem Supply End Examination, July-2022

Database Management Systems

(CSC, CSD, CSE, CSI & IT)

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) | What is database? | 2M | C01 | BL1 |
| b) | Quote examples for composite attribute. | 2M | C01 | BL1 |
| c) | Define key and list out them. | 2M | C02 | BL1 |
| d) | What is meant by cardinality and degree of a relation? | 2M | C02 | BL1 |
| e) | State first normal form. | 2M | C03 | BL1 |
| f) | What is multi-valued dependency? | 2M | C03 | BL1 |
| g) | Define transaction. | 2M | C04 | BL1 |
| h) | Give example for a serial schedule. | 2M | C04 | BL1 |
| i) | What is a dense index? | 2M | C05 | BL1 |
| j) | Compare primary and secondary indexes? | 2M | C05 | BL1 |

PART- B

(10*5 Marks = 50 Marks)

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| 2 a) | List the disadvantages of file systems. | 5M | C01 | BL1 |
| b) | What are the functionalities of database administrator? | 5M | C01 | BL1 |

OR

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| 3 | Construct an ER diagram for college admission systems. Try to incorporate the basic and advanced features of ER model. | 10M | C01 | BL6 |
| 4 a) | Illustrate the use of join operation of relational algebra. | 5M | C02 | BL4 |
| b) | Contrast tuple relational calculus with domain relational calculus. | 5M | C02 | BL4 |

OR

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| 5 | What is an integrity constraint? Discuss different types of integrity constraints and their enforcement by DBMS. | 10M | C02 | BL2 |
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| 6 | a) What is a trigger? Explain with an example. | 5M | C03 | BL4 |
| | b) Illustrate five aggregate operators of SQL. | 5M | C03 | BL4 |
| OR | | | | |
| 7 | Explain the problems caused by redundancy and suggest methods to reduce redundancy. | 10M | C03 | BL4 |
| OR | | | | |
| 8 | a) Discuss the desirable properties of transaction. | 6M | C04 | BL2 |
| | b) How to perform undo operation in recovery algorithm? | 4M | C04 | BL1 |
| OR | | | | |
| 9 | Describe time stamp based protocol for concurrency control using a suitable schedule. | 10M | C04 | BL2 |
| OR | | | | |
| 10 | a) Differentiate between linear probing and linear hashing. | 4M | C05 | BL2 |
| | b) Discuss B+ tree as a dynamic multi level indexing structure. | 6M | C05 | BL2 |
| OR | | | | |
| 11 | What is meant by file organization? Explain different types of file organizations and make a comparison of them. | 10M | C05 | BL4 |

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