

15 FEB 2023

Reg. No.

Question Paper Code

11714

**B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022**

**Fourth Semester**

**Computer Science and Engineering**

(Common to Third Semester Artificial Intelligence and Data Science)

**20CSPC402 - DATABASE MANAGEMENT SYSTEMS**

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

- |  | <i>Marks,<br/>K-Level, CO</i> |
|--|-------------------------------|
| 1. List the three levels of data abstraction.                        | 2,K1,CO1                      |
| 2. Name the types of Entity.   | 2,K1,CO1                      |
| 3. Differentiate SELECT and PROJECT operation in Relational algebra. | 2,K2, CO2                     |
| 4. Discuss about trigger.  | 2,K2 CO2                      |
| 5. Name the different types of locking protocols.                    | 2,K1, CO3                     |
| 6. List the properties of transaction.                               | 2,K1,CO3                      |
| 7. Define Indexed Sequential Access Method.                          | 2,K1 CO4                      |
| 8. Differentiate Extendable and Linear hashing.                      | 2,K2,CO4                      |
| 9. Define Distributed Database System.                               | 2,K1,CO5                      |
| 10. State XQuery.  | 2,K1,CO5                      |

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

- |   |           |
|---|-----------|
| 11. a) (i) Discuss the various functions of Database administrator.                   | 5,K2,CO1  |
| (ii) Explain the architecture of a Database system.                                   | 8,K2,CO1  |
| <b>OR</b>   |           |
| b) (i) Write a note on Database languages.  | 6,K3,CO1  |
| (ii) Illustrate with neat sketch the E-R diagram corresponding to customers to loans. | 7,K3,CO1  |
|   |           |
| 12. a) Explain the various operations in Relational algebra with examples.            | 13,K2,CO2 |
| <b>OR</b>   |           |
| b) Write short note on different types of Normalization with an example.              | 13,K3,CO2 |

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

**11714**

13. a) Write a detailed note on SQL fundamentals with appropriate examples. 13,K3,CO3
- OR**
- b) Explain the steps involved in Query processing. Give suitable examples. 13,K2,CO3
14. a) Discuss in detail about Deadlock and its prevention schemes. 13,K2,CO4
- OR**
- b) (i) Explain the ACID properties of a Transaction. 5,K2,CO4  
(ii) Describe Two phase locking protocol with examples. 8,K2,CO4
15. a) What is RAID? Explain different levels of RAID in detail. 13,K2,CO5
- OR**
- b) Illustrate the structure of B Trees and B<sup>+</sup> Trees with example. 13,K2,CO5

**PART - C (1 × 15 = 15 Marks)**

16. a) Illustrate in detail about XML databases and XML DTD with example. 15,K3,CO6
- OR**
- b) Write a note on 15,K3, CO6  
(i) ODL  
(ii) OQL