

II B. Tech II Semester Supplementary Examinations, December - 2022**DATABASE MANAGEMENT SYSTEMS**

(Common to CSE, CST, CSE(CS), CSE(IOTCSIBCT), CSE(CSBS), CSE(IOT), & CS)

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

Answer any **FIVE** Questions each Question from each unit
All Questions carry **Equal** Marks

UNIT-I

- 1 a) What are the disadvantages of keeping organizational information in a file-processing system? Discuss in detail. [7M]
b) Describe the importance of environment and structure of database systems. How the environment effects the applications of database systems? Explain. [7M]

Or

- 2 a) With neat sketch explain the architecture of client-server organization of database systems. [7M]
b) Describe the importance of conceptual schema in modeling the database systems and data models. [7M]

UNIT-II

- 3 a) What is the importance of null values? Explain comparison of using null values and not using null values with examples. [7M]
b) Explain various DML operations with student database system. [7M]

Or

- 4 a) How to ensure the integrity with key constraints in database systems? Explain with primary and foreign key constraints. [7M]
b) Describe the importance of nested queries. Give its application in performing various arithmetic operations. [7M]

UNIT-III

- 5 a) What is an ER-model? Explain various relationship cardinalities used in it with an example ER-model for examination system. [7M]
b) How do Views ensure database security? Specify the constrains to create updateable Views. [7M]

Or

- 6 a) Suggest an application to be modeled using ER model. Identify entities attributes, entity sets and relationships in that and explain each of them. [7M]
b) Explain the following: i) Structural Constraints ii) Types of joins. [7M]



UNIT-IV

- 7 a) How to test decomposition is lossless-join and dependency preserving? Give examples. [7M]
- b) Consider the attribute set $R=ABCDEFGH$ and the FD set $F=\{AB \rightarrow C, AC \rightarrow B, AD \rightarrow D, BC \rightarrow A, E \rightarrow G\}$ for attribute sets $ABC, ABCEG$ compute the set of dependencies that hold over set and name the strongest normal form. [7M]

Or

- 8 a) Consider the relation R with 5 attributes $ABCDE$ with dependencies $A \rightarrow B, BC \rightarrow E$ and $ED \rightarrow A$ then find all the keys and check the relation is in 3NF or BCNF. [7M]
- b) List and explain the problems caused by redundancy. How schema refinement helps out? Discuss. [7M]

UNIT-V

- 9 a) Define the concept of schedule for a set of concurrent transaction. Discuss the role of recovery and atomicity with a suitable example. [7M]
- b) Write about the working principle of tree based indexing and various techniques used in it with suitable examples. [7M]

Or

- 10 a) Compare the working principles, advantages and disadvantages of Ordered Indexing with Hashing and tree based indexing. [7M]
- b) How to maintain redundant arrays of storage? Explain the role of mirroring and various levels of redundant arrays in detail. [7M]

