

Code No: 154AM**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech II Year II Semester Examinations, February - 2024****DATABASE MANAGEMENT SYSTEMS****(Common to CSE, IT, CSBS, CSIT, ITE, CSE(AI&ML), CSE(DS), AI&DS, AI&ML, CSD)****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, answer all questions.

iii) 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**(25 Marks)**

- 1.a) Differentiate between physical schema and logical schema. [2]
- b) Define atomicity and consistency. [3]
- c) What do you mean by procedural DML? [2]
- d) Differentiate between SQL commands DROP TABLE and DROP VIEW. [3]
- e) Demonstrate transitive dependency? Give an example. [2]
- f) Which normal form is considered adequate for normal relational database design? [3]
- g) Give the reasons for allowing concurrency. [2]
- h) Design your own example to illustrate cascaded rollback. [3]
- i) Define Primary index and Secondary Index. [2]
- j) Discuss about Dense Index. [3]

PART – B**(50 Marks)**

- 2.a) Discuss the main characteristics of the database approach and how does it differ from traditional file system.
 - b) What are the three levels of abstraction in DBMS? Explain. [5+5]
- OR**
- 3.a) List the different types of database users with their roles.
 - b) What is meant by E-R model? Explain with an example. [5+5]
- 4.a) Explain about different types of integrity constraints.
 - b) Define Join. Explain different types of joins. [5+5]
- OR**
- 5.a) Write about views and updates on views.
 - b) Illustrate different set operations in Relational algebra with an example. [5+5]
- 6.a) Explain Triggers in SQL and its types with an examples.
 - b) Explain Closure of Set of Functional dependency and Closure of Attribute sets. [5+5]
- OR**
- 7.a) Explain Decomposition and its properties.
 - b) Explain Boyce-codd normal form with an example. [5+5]

- 8.a) Explain about the two-phase locking with suitable example. [5+5]
b) Describe about testing of Serializability. [5+5]

OR

- 9.a) Explain log-Based Recovery in detail. [5+5]
b) Describe Validation-based protocols. [5+5]

- 10.a) Write in detail about Hash based Indexing and Tree based Indexing. [5+5]
b) Describe the different types of file organization. [5+5]

OR

- 11.a) Explain B+ trees. Discuss about this dynamic index structure. [5+5]
b) Illustrate insertion and deletion of an element in B+ trees with example. [5+5]

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