

Code No: 114CQ

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year II Semester Examinations, September/ October - 2023

DATABASE MANAGEMENT SYSTEMS

(Computer Science and Engineering)

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) Define DBMS. [2]
- b) Write the purpose of DDL. List any 2 commands of DDL. [3]
- c) What is tuple relational calculus? [2]
- d) Write the purpose of order by in SQL with example. [3]
- e) What is functional dependency? [2]
- f) What is BCNF? [3]
- g) Define transaction in DBMS. [2]
- h) Explain serializability in databases [3]
- i) What is secondary indexes? [2]
- j) Write about tree structured indexing. [3]

**PART - B**

(50 Marks)

- 2.a) List the applications of DBMS.
  - b) Explain various data models. [5+5]
- OR**
- 3.a) Write about Relational model in DBMS.
  - b) Write a note on views. [5+5]
- 4.a) Explain about the set comparison operators used in SQL queries with example.
  - b) How to perform comparison using NULL values? Explain. [5+5]
- OR**
5. Elaborate on joins in SQL queries with example. [10]
  6. Discuss Multi-valued dependency and Fourth Normal form with suitable example. [10]
- OR**
- 7.a) Write detailed notes on the dependency preserving decomposition.
  - b) Explain fifth Normal form. [5+5]
- 8.a) What is concurrency control in databases? Explain Time stamp-based protocol in detail.
  - b) Explain multiple granularity. [5+5]
- OR**
9. Why we need to backup database? Discuss the remote backup systems of the DBMS. [10]
  10. Elaborate on file organization of the DBMS. [10]
- OR**
11. Discuss on any two methods of hash based indexing. [10]