

Code No: 184AQ

R22

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year II Semester Examinations, December – 2024/January -2025

DATABASE MANAGEMENT SYSTEMS

(Common to CSE, IT, CSE(AI&ML), CSE(DS), AI&DS, AI&ML, CSD)

Time: 3 Hours

Max. Marks: 60

Note: This question paper contains two parts A and B.

i) Part- A for 10 marks, ii) Part - B for 50 marks.

- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. From each unit, there are two questions and the student should answer one of them. Hence, the student should answer five questions from Part-B.

PART- A

(10 Marks)

- 1.a) Define Entity, attribute and relationship. [1]
- b) What are the responsibilities of a DBA? [1]
- c) Define Schema diagram. [1]
- d) What is the difference between tuple relational calculus and domain relational calculus? [1]
- e) What trivial dependency? [1]
- f) Define Normalization of data? [1]
- g) State Thomas write rule. [1]
- h) Why do we need remote backup systems? [1]
- i) Define sparse index. [1]
- j) What are the advantages and disadvantages of indexed sequential file? [1]

PART-B

(50 Marks)

2. Explain about the Purpose of Database system and advantages of DBMS. [10]

OR

3. Discuss the basic concepts of E-R Model. [10]

4. Explain about data integrity constraints. [10]

OR

5. Explain about various types of JOIN operations in SQL. [10]

6. Briefly explain about 1NF, 2NF and 3NF. [10]

OR

7. Write about decomposition preservation algorithm for all FD's. [10]

8. What is Serializability? Explain its Types. [10]

OR

9. Explain about ACID properties. [10]

10. Briefly explain about Organization of records in files. [10]

OR

11. Explain about Static hash function. What is the need for Dynamic Hash function? [10]