

R18

Code No: 154AM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

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) Define database. [2]
- b) What is the data security mechanism in file system? [3]
- c) What is equi join operation? [2]
- d) What is a bound variable in calculus? [3]
- e) Define functional dependency. [2]
- f) What is the purpose of attribute closure? [3]
- g) What is a log tail? [2]
- h) What is a recoverable schedule? [3]
- i) Define index. [2]
- j) What is the need of cylinder in disks? [3]

PART – B

(50 Marks)

2. With a neat diagram describe the overall system structure of database management system. [10]
- OR**
3. Construct an ER diagram to perform conceptual database design for online bus reservation system. [10]
4. With suitable expressions illustrate ten operators used in relational algebra. [10]
- OR**
5. Explain the importance of primary key and foreign key concepts in database management with necessary examples. [10]
6. What is redundancy? Explain the problems caused by redundancy in database design with an example relational instance. [10]

OR

QA

QA

QA

QA

QA

QA

QA

QA

7. Consider the database schema to write queries in SQL:

Employee(Eid, Ename, Ecity)

Company(Cno, Cname, Ccity)

Works_For(Eid, Cno, Salary)

a) Find the employees from Warangal and earning more than 50000.

b) Find the names of the companies having Karimnagar employees.

c) Find the employees working for two companies.

[3+3+4]

8. Explain the desirable properties of database transaction and their role in concurrency control. [10]

OR

9. With suitable example schedules demonstrate recovery of system with concurrent transactions. [10]

10. Make a comparison of sorted file, heap file and hash file organizations for data records. [10]

OR

11. Describe B+ tree indexing structure as a dynamic multi-level indexing technique. [10]

---ooOoo---

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA

QA