

Code No: 843AA

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA II Semester Examinations, December - 2019****DATABASE MANAGEMENT SYSTEMS****Time: 3hrs****Max.Marks:75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****5 × 5 Marks = 25**

- 1.a) What is aggregation in ER diagram? Explain with example. [5]
- b) What are candidate key, primary key, and foreign key? [5]
- c) What is a functional dependency? Quote example. [5]
- d) What do you understand by serializability of schedules? Explain. [5]
- e) Explain the distinction between static and dynamic hashing. Discuss the relative merits of each technique. [5]

**PART - B****5 × 10 Marks =50**

2. Explain following terms with examples
  - a) Data Independence
  - b) Data manipulation language
 [5+5]
- OR**
3. Explain the several choices and issues involved in Conceptual design with ER Model. [10]
4. Discuss the process of converting ER model to Relational model. [10]
 

**OR**
5. Consider the following given schema and write the SQL queries  
 Sailor (sailorid, sailorname, rating, Age)  
 Reserves (sailorid, Boatid, day)  
 Boat Schema (Boatid, boatname, color)
  - a) find the names and ages of sailors with a rating above 6.
  - b) Find the sailor name, boat id and reservation date for each reservation.
  - c) Find the names of sailors who have reserved boat 202.
  - d) Find the names of sailors who have reserved at least two boats.
  - e) Find the sailors who have reserved all the red boats. [10]
6. Explain primitive operations and derived operations in Relational Algebra. [10]
 

**OR**
7. What is Lossless join and dependency Preservation property for decomposition? Explain. [10]
- 8.a) What is the need of concurrency control?  
 b) What is two-phase locking and how does it guarantee serializability? [3+7]
 

**OR**
9. What is time stamping? Explain a mechanism of concurrency control that uses time stamping with the help of an example. [10]
10. Discuss about B+ tree index file with example. [10]
 

**OR**
11. Describe the different types of file organization. Explain their advantages and disadvantages. [10]