

Code No: 843AA

**R17****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA III Semester Examinations, October/ November - 2020****DATABASE MANAGEMENT SYSTEMS****Time: 2 Hours****Max.Marks:75**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) Discuss the drawbacks of storing and managing the data in the files.  
b) What are participation constraints in ER model? [7+8]
2. Explain various DDL and DML commands with suitable example. [15]
- 3.a) Explain the commands available for modifying the database in SQL.  
b) Explain the aggregate functions with SQL. [7+8]
- 4.a) Explain and compare WHERE and Having Clause.  
b) How are the OUTER JOIN operations different from JOIN operations? How is the OUTER UNION operation different from UNION? [7+8]
5. Using the following schema write the queries using Relational Algebra  
Sailors (sailor-id, sailor-name, sailor-rating, sailor-age)  
Boats (boat-id, boat-name, boat-color)  
Reserves (sailor-id, boat-id, booked-date)  
a) List all the boat details whose color is "Red"  
b) List the Sailor details whose have not booked a boat on "10/12/2019"  
c) List the Sailor details who are aged more than 40.  
d) List the Sailors who booked Red boat on "10/12/2019"  
e) List the sailor whose rating is "6" and booked a "green" boat. [15]
6. Explain each of the following with example  
a) Boyce-Codd Normal Form                      b) Fourth Normal Form [7+8]
- 7.a) Describe the three phases of the ARIES recovery method.  
b) Describe the write-ahead logging protocol. [7+8]
8. Explain Linear Hashing and extendable Hashing as dynamic indexing structure. [15]

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