

Code No: 872AB**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA II Semester Examinations, March - 2023****DATABASE MANAGEMENT SYSTEMS****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) Classify the various data models. [5]
- b) Write a short note on nested queries. [5]
- c) Write SQL queries for aggregate operators with examples. [5]
- d) What is transaction? Explain ACID properties of a transaction. [5]
- e) Give a brief note on cluster indexes. [5]

PART – B**(50 Marks)**

- 2.a) What is DBMS? Differentiate between file systems and DBMS? [5+5]
- b) Explain the structure of DBMS. [5+5]
- OR**
3. What is ER model? Explain the various symbols used in ER-model and draw a ER diagram for hotel room reservation system. [10]
- 4.a) Analyze the expressive power of relational algebra. [5+5]
- b) Write short notes on relational algebra. [5+5]
- OR**
5. What is relation? Explain how to destroy/alter tables and views with example queries. [10]
- 6.a) What is multiple granularity? Explain. [5+5]
- b) Give a brief summary on transaction recovery and atomicity. [5+5]
- OR**
- 7.a) What is data decomposition? Discuss the problems associated with decomposition. [5+5]
- b) Explain fourth and fifth normal forms. [5+5]
8. How to test serializability of a schedule? Explain in detail with an example. [10]
- OR**
- 9.a) Explain deferred database modification technique with an examples. [5+5]
- b) Write short notes on time-stamp based protocols. [5+5]
10. What is the purpose of indexing in DBMS? Explain secondary indexing with suitable diagram. [10]
- OR**
11. Explain the following terms. [5+5]
 - a) File indexing
 - b) B++ trees.

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