

**R20**

**Code No: 872AB**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**MCA II Semester Examinations, October/November - 2022**

**DATABASE MANAGEMENT SYSTEMS**

**Time: 3 Hours**

**Max.Marks:75**

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

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- 1.a) How does database management system provide data abstraction? Discuss briefly.
- b) Describe the overall system structure of database management system. [8+7]
- 2.a) With examples explain the concept of descriptive attribute, determinant, derived attribute.
- b) What is aggregation in ER diagram? Explain with an example. [8+7]
- 3.a) Discuss the basic features of relational model.
- b) Demonstrate the steps in logical database design. [7+8]
- 4.a) Is Relational Algebra a procedural DML? Justify your answer.
- b) What is an unsafe query in relational calculus? How to handle them while querying a database? [7+8]
5. Consider the following schema to write queries in SQL.  
Suppliers(sid,sname,address)  
Parts(pid,pname,color)  
Catalog(sid,pid,cost)
  - i) Find the snames of suppliers who supply some red part and some green part.
  - ii) Find the sids of suppliers who supply every red part or supply every green part.
  - iii) Find the pids of parts supplied at least two different suppliers. [15]
6. Explain the need of schema refinement in database design process, briefly explain the steps involved in schema refinement. [15]
- 7.a) What is serializability? With examples explain serializability and recoverable schedules.
- b) Discuss ARIES algorithm for crash recovery of concurrent transaction system. [8+7]
- 8.a) Make a comparison of heap file organization and hash file organization.
- b) With an example demonstrate extendible hashing concept. [8+7]

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