III B. Tech I Semester Supplementary Examinations, Dec/Jan- 2022-23
DATABASE MANAGEMENT SYSTEMS
(Common to CSE and IT)

Time: 3 hours   Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
        2. Answering the question in **Part-A** is compulsory
        3. Answer any **THREE** Questions from **Part-B**
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PART –A   (22 Marks)

1. a) Enlist and explain the properties of database management systems? [3M]

   b) Define domain, degree and cardinality? [4M]

   c) Distinguish between nested query and correlated nested query [4M]

   d) What are the problems related to decomposition? Explain. [4M]

   e) List and explain the three basic techniques to control deadlocks. [4M]

   f) What is a buffer manager? Explain its role. [3M]

PART –B   (48 Marks)

2. a) Illustrate the database characteristics. How they are different from File systems. [8M]

   b) Draw and explain three level architecture of database system. [8M]

3. a) Illustrate about integrity and key constraints with suitable examples? [8M]

   b) Consider following schemas: [8M]
     Student (sid: **Integer**, Firstname: **string**, lastnmae: **string**, age: **Integer)**
     Explain how to use logical operators in SQL queries?

4. a) How to represent generalization, specialization and aggregation using ER Diagrams. Explain with suitable ER diagram. [8M]

   b) Write SQL queries to implement aggregate functions by using student database? [8M]

5. a) Define normalization? What are the steps in normalization? What are the advantages of normalized relation over un normalized relation? [8M]

   b) Explain 1NF, 2NF and 3NF with suitable example. And Illustrate the problems with these normalizations. [8M]

6. a) Discuss briefly about 2PL? List and explain the types of 2PL. [8M]

   b) What is Thomas' write rule? Explain the techniques used to prevent deadlocks? [8M]

7. a) Briefly explain about cost model? Find the cost of performing scan, insert and delete operations on heap files and sorted files? [8M]

   b) Illustrate about static and dynamic hashing in file organization? [8M]