



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech IV Semester End Examinations (Regular), November – 2020

Regulation: IARE–R18

## DATABASE MANAGEMENT SYSTEMS

**Time: 2 Hours**

**(CSE | IT)**

**Max Marks: 70**

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**Answer any Four Questions from Part A**

**Answer any Five Questions from Part B**

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### PART – A

1. List the different types of data model with relevant examples. [5M]
2. Write short notes on domain relation calculus. [5M]
3. Explain the join operations in SQL with suitable examples. [5M]
4. List the different properties of transactions. [5M]
5. Give the comparison between ordered indexing and hashing. [5M]
6. List out various roles of data base administrator. [5M]
7. Explain the role of functional dependency in the process of normalization. [5M]
8. What is heap file? How are pages organized in a heap file? [5M]

### PART – B

9. Explain the various components of overall database system architecture. [10M]
10. Construct an E-R diagram for hospital with a set of patients and a set of medical doctors. Associate with each patient a log of various tests and examinations conducted. [10M]
11. Explain the relational algebra expressions for SET operations. [10M]
12. Write any four basic Tuple relational calculus expressions with example. [10M]
13. Write in detail about various operations in Data Definition Language (DDL) query with syntax and example. [10M]
14. Why normalization required in a database? Give various normal forms of relational schema and define a relation which is in BCNF and explain with suitable example. [10M]
15. Write short note on shadow paging. Discuss on time stamp based protocol. [10M]
16. What is dead lock? List and discuss the four conditions for deadlock. [10M]
17. Describe the structure of B+ tree and list the characteristics of a tree. [10M]
18. Write in detail about hash based indexing and tree based indexing. [10M]