

**DATABASE MANAGEMENT SYSTEMS**

(Common to CSE & IT)

Time: 3 hours

Max. Marks: 70

**PART - A**

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Describe the three levels of data abstraction.
  - (b) What is data independence?
  - (c) What is relational algebra?
  - (d) What is normalization?
  - (e) What is BCNF?
  - (f) What is indexing and what are the different kinds of indexing?
  - (g) What is database trigger?
  - (h) What is database tuning?
  - (i) How reliability can be improved through redundancy?
  - (j) What is meant by multi-dimensional database?

**PART - B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT - I**

- 2 Explain about different kinds of data models.

**OR**

- 3 Explain the notational conventions used in ER model. Construct ER model for student administration system.

**UNIT - II**

- 4 Explain briefly about fundamental relational algebra operations.

**OR**

- 5 Explain about inference rules for functional dependencies and also explain about second normal form.

**UNIT - III**

- 6 Explain about data definition language in detail.

**OR**

- 7 (a) Explain about SQL fundamentals.  
(b) Explain about triggers.

**UNIT - IV**

- 8 Explain how hashing is used for file organization. Write about static hashing and dynamic hashing.

**OR**

- 9 Discuss how multilevel indexes are constructed using B trees and B+ trees.

**UNIT - V**

- 10 Discuss various concurrency control protocols.

**OR**

- 11 Discuss 2PC (2 phase commitment) protocol and its significance.

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