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## 67174

# MCA 4th Semester (Non CBCS Scheme) Examination – May, 2019

### ADVANCED DATABASE SYSTEMS

Paper: MCA-404

Time: Three Hours ]

[ Maximum Marks: 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note: Attempt five questions in all, selecting at least one questions from each Unit. Question No. 1 is compulsory. All questions carry equal marks.

- 1. (a) What is object identity? Explain with example.
  - (b) What do you mean by persistent programming language? Explain.
  - (c) What are nested relations? Give example
  - (d) State and explain any two query equivalence rules.
  - (e) Explain semi-join operation in brief.

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(f) Describe vertical data fragmentation with example.

What is a trigger? What its types?

(h) Why we need XML?

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#### UNIT - I

2. List the various data abstraction concepts and the corresponding modeling concepts in the EER model. 16

3. Explain the following with examples:

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- (i) Participation Constraints
- (ii) Encapsulation of operations
- (iii) Type hierarchies
- (iv) Type constructors

#### UNIT - II

- 4. What is semantic query optimization? Explain in detail.
- 5. (a) Describe the main components of information retrieval system.
  - (b) Describe Applications of Decision Support Systems in detail.

### UNIT - III

6. Describe the architecture of parallel databases in detail. 16

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 Describe 3 phase commit protocol in context of recovery mechanism in Distributed DBMS.

#### UNIT - IV

- 8. Describe Semi-structured data model and various issues related to it.
- 9. Write short notes on:

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- (a) Multimedia database
- (b) Spatial Database

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