

## FACULTY OF ENGINEERING

B.E. 3/4 (CSE) I-Semester (Main) Examination, November 2013

**Subject : Database Management Systems**

**Time : 3 Hours**

**Max. Marks: 75**

**Note: Answer all questions of Part - A and answer any five questions from Part-B.**

### PART – A (25 Marks)

1. Explain three levels of data abstraction. (3)
2. What is candidate key? (2)
3. Explain 'Cartesian - Product' operation in relational algebra with an example. (3)
4. Explain aggregate functions in SQL. (2)
5. What is embedded SQL? (2)
6. Define functional dependency with example. (3)
7. What is static hashing? (3)
8. Explain state diagram of transaction. (2)
9. When a transaction need to the Roll back? (2)
10. What are dead lock prevention technique and explain? (3)

### PART – B (5x10=50 Marks)

11. Explain the advantages of DBMS over traditional file processing system. (10)
- 12.(a) Explain E-R diagram with extended features. (6)  
(b) Explain the concept of generalization and specialization. (4)
13. What is normalization? Explain 1NF, 2NF, 3NF with examples. (10)
- 14.(a) Explain the concept of 'conflict serializability' with an example. (6)  
(b) What are ACID properties and explain each of them? (4)
- 15.(a) Construct B<sup>+</sup> tree for the following set of values (6)
 

5	15	25	35	45	
55	65	75	85	95	99
- (b) Describe about multiple Granularity protocol. (4)
- 16.(a) Describe about 'Thomas' write rule. (4)  
(b) Discuss about Time-stamp based protocol and validation based protocols. (6)
17. Write short notes on the following:
  - (a) Storage structure (4)
  - (b) ARIES (3)
  - (c) Recursion in SQL (3)

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