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Code No.: 211

**VASAVI COLLEGE OF ENGINEERING (*Autonomous*), HYDERABAD**  
**M.C.A. II Year I – Semester (Main) Examinations, January – 2016**

**Database Management Systems**

Time: 3 hours

Max. Marks: 70

*Note: Answer ALL questions in Part-A and any FIVE questions from Part-B*

**Part-A ( $10 \times 2 = 20$  Marks)**

1. Differentiate between Data Manipulation Language and Data Definition Language.
2. What are the Integrity constraints?
3. What is Cartesian product?
4. Define Null value.
5. Define Normalization.
6. Define Functional dependency.
7. Differentiate between Multilevel indices and Secondary Indices.
8. Define Durability of a transaction.
9. What is Time stamp-Ordering Protocol?
10. What are the check points?

**Part-B ( $5 \times 10 = 50$  Marks)**

11. a) Explain about Entity-Relationship Model. [5]  
b) Describe about Reduction to Relational Schemas. [5]
12. a) Discuss about various Relational Algebra operations with example. [6]  
b) Explain about Aggregate functions with example. [4]
13. a) Discuss about Recursive Queries. [5]  
b) Explain about the concept of Decomposition using multivalued dependencies. [5]
14. a) How a file can be organized using B<sup>+</sup>-Trees? [6]  
b) Discuss about Atomicity and Isolation. [4]
15. a) What is Two- phase locking system? Explain with an example. [6]  
b) Explain the procedure to recover from Deadlock. [4]
16. a) Explain about different constraints occurred in Generalization. [5]  
b) Discuss about Authorization techniques in database. [5]
17. Write short notes on any *two* of the following:  
a) Triggers [5]  
b) Dense and spare Indices [5]  
c) Multi-version schemes. [5]

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