VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD
M.C.A. (CBCS) III-Semester Main Examinations, January-2018
Database Management Systems

Time: **3** hours
Max. Marks: **70**

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

Part-A *(10 × 2 = 20 Marks)*

1. Write about the three levels of data abstraction.
2. List out various types of attributes with example
3. What is a super-key and a candidate key? Give examples?
4. How do you test for empty relation?
5. Is it possible to pass parameters to triggers?
6. Define functional and multivalued dependencies
7. Distinguish between B-tree and B+ tree.
8. Draw state diagram of a transaction. How do you test whether a given non-serial schedule is serializable?
9. Define W-time stamp and R-time stamp of a data item
10. Explain why "stable storage cannot be implemented".

Part-B *(5 × 10 = 50 Marks)*

11. a) List five responsibilities of a database management system. For each responsibility, explain the problems that would arise if they were not discharged. [7]
    b) Explain how mapping cardinalities can be used in imposing constraints. [3]

12. a) Explain Integrity constraints with syntax and example. [5]
    b) Explain different kinds of joins with example. [5]

13. a) Describe the circumstances in which embedded SQL is used rather than SQL alone or only general purpose programming language. [6]
    b) Explain Functional dependency with an example. [4]

14. a) Explain Dynamic Hashing with example. [6]
    b) Justify " concurrent execution of transactions is more important when data must be fetched from(slow) disk or when transactions are long and is less important when data is in memory and transactions are very short". [4]

15. a) Discuss about Timestamp based protocol. [5]
    b) Explain the database recovery technique based on deferred update. [5]

16. a) Explain E-R diagram with their extended E-R features. [4]
    b) Describe the GRANT function and explain, how it relates to security. What types of privileges may be granted? How are they revoked? [6]

17. Answer any *two* of the following:
    a) Differentiate between stored procedure and function in SQL. [5]
    b) Compare Ordered Indexing & Hashing. [5]
    c) Describe about Remote Backup Systems. [5]

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