

**B.Tech. – VIEP – COMPUTER SCIENCE AND  
ENGINEERING (BTCSVI)****Term-End Examination****December, 2015****BICSE-007 : DISTRIBUTED DATABASE***Time : 3 hours**Maximum Marks : 70*

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**Note:** Answer any **seven** questions. All questions carry equal marks.

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1. Describe DDBMS architecture in detail. 10
2. (a) Explain in brief the distributed catalog management. 5  
(b) “Bottom up design approach is suitable when a database system is to be designed from scratch.” Comment. 5
3. (a) How does the complexity of relational algebra operations affect query execution time? 5  
(b) Explain in brief the failure unique to distributed environment. 5
4. Discuss, with the help of a diagram, the interface between the local recovery manager and buffer manager. 10

5. (a) Draw and explain the layers of query processing. 5
- (b) Explain the hill-climbing method of query optimization with an example. 5
6. (a) What are timestamp-based concurrency control algorithms ? Explain any one such algorithm. 5
- (b) Differentiate between partitioned and replicated databases. Discuss the fundamental issues while designing a distributed database. 5
7. Explain serializability theory with an example. 10
8. (a) List the steps of query decomposition and explain any one from that. 5
- (b) Explain In-place update recovery and Out-place update recovery. 5
9. (a) "Query analysis phase enables rejection of normalized queries, for which further processing is either impossible or unnecessary." Justify your answer. 5
- (b) What is check-pointing ? Explain the steps needed to achieve check-pointing. 5
10. Write short notes on any **two** of the following : 2×5=10
- (a) 2PC
- (b) Buffer Management
- (c) Multiway Joins
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