

**Code No: 157BJ****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, February/March - 2022****DISTRIBUTED DATABASES****(Information Technology)****Time: 3 Hours****Max. Marks: 75****Answer any Five Questions  
All Questions Carry Equal Marks**

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- 1.a) Give an overview of various architectural alternatives in distributed DBMS.  
b) Explain partitioning algorithm. [8+7]
- 2.a) Explain client/server reference architecture.  
b) Give the allocation model that minimizes the total cost of processing and storage. [8+7]
- 3.a) Give the generic layering scheme for distributed query processing.  
b) Explain INGRES algorithm. [8+7]
- 4.a) What is an operator tree? Explain how to obtain an equivalent operator tree by applying transformation rules using examples.  
b) What is a semijoin program? Explain with an example. [8+7]
- 5.a) Give an overview of various types of transactions.  
b) Explain basic timestamp-ordering algorithm. [8+7]
- 6.a) What are the various phases of optimistic transaction execution and the possible execution scenarios? Give the rules for ensuring serializability in optimistic concurrency control algorithms.  
b) Explain mechanisms for deadlock avoidance. [8+7]
7. Explain two phase commitment protocol, and termination and recovery protocols for two phase commitment. [15]
- 8.a) What do you mean by cache consistency? What are the various methods for ensuring cache consistency?  
b) Explain vertical class partitioning. [8+7]

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