

Reg. No. \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

SECOND SEMESTER MCA DEGREE (LATERAL ENTRY) EXAMINATION, AUG 2017

Course Code: **RLMCA266**Course Name: **ADVANCED DATABASE SYSTEMS**

Max. Marks: 60

Duration: 3 Hours

**PART A***Answer all questions. Each question carries 3 marks.*

1. How to perform selection operation Using File Scan algorithm and what is the cost estimate?
2. Which are the complex selection predicates used for the implementation of complex selections?
3. In OO data paradigm, what are object identifiers, explain with example?
4. Differentiate constructors and destructors and accessors and mutators in OO paradigm.
5. In the context of distributed storage, how the following differ: fragmentation transparency, replication transparency and location transparency?
6. With the diagram of system structure of distributed databases, define transaction manager and transaction coordinator along with their responsibilities.
7. Differentiate between range based partitioning and hash based partitioning with its advantages and disadvantages in MongoDB.
8. Differentiate ACID and BASE.

**PART B***Each question carries 6 marks.*

9. Using diagrams, explain the RAID levels.

OR

10. How can we organize files of variable length records?
11. With an example, explain dense index and sparse index.

OR

12. State the algorithm for querying B+ tree.
13. Why Sorting of data plays an important role in database systems? Explain External Sort-Merge Algorithm with a neat diagram.

OR

14. With an example and neat sketch explain the steps involved in query processing.
15. With neat diagrams discuss about UML, the ER diagramming model for OO relationships.

OR

16. Explain the concepts of OO paradigm.
17. Explain 2PC protocol and how it handles failures?

OR

18. Discuss about any three locking protocol mechanism for concurrency control in distributed environment.
19. How replication in MongoDB is maintained?

OR

20. Which are the most significant levels of consistency?

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