

**APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER**

Q. P. Code : 1C171

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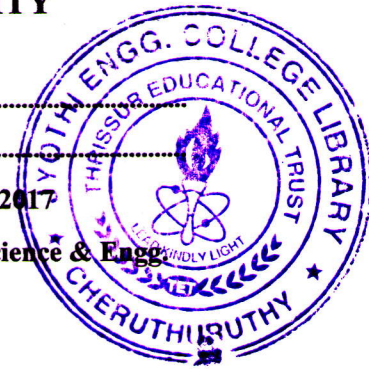
Name

Reg. No:

FIRST SEMESTER M.TECH. DEGREE EXAMINATION December 2017

Branch: Computer Science

Specialization: Computer Science & Engg



08CS6031 ADVANCED DATABASE TECHNOLOGY

Time:3 hours

Max.marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

| Q.no. | Module 1 | Marks |
|----------------------|---|-------|
| 1.a | Why is 5NF also called project-join normal form (PJNF)? | 3 |
| Answer b or c | | |
| b | Consider a relation R(A,B,C,D,E) with the following functional dependencies: AB → C BC → D CD → E DE → A (a) Which of the given functional dependencies violate Boyce-Codd Normal Form (BCNF)? (b) Give a decomposition of R into BCNF by applying decomposition algorithm. | 6 |
| c | Explain how the PROJECT operation is executed using sort-merge algorithm | 6 |
| Q.no. | Module 2 | Marks |
| 2.a | Explain Range-partitioning sorting briefly. | 3 |
| Answer b or c | | |
| b | What form of parallelism (inter query, interoperation, or intra operation) is likely to be the most important for each of the following tasks? a. Increasing the throughput of a system with many small queries b. Increasing the throughput of a system with a few large queries, when the number of disks and processors is large | 6 |
| c | With pipelined parallelism, it is often a good idea to perform several operations in a pipeline on a single processor, even when many processors are available. Justify. | 6 |

| Q.no. | Module 3 | Marks |
|----------------------|---|-------|
| 3.a | Why do organizations resort to distributed database management? List out various reasons. | 3 |
| Answer b or c | | |
| b | Explain transaction management in distributed database. | 6 |
| c | Explain various concurrency mechanisms in distributed database. | 6 |

| Q.no. | Module 4 | Marks |
|----------------------|--|-------|
| 4.a | What are the differences between structured, semi structured and unstructured data? | 3 |
| Answer b or c | | |
| b | Write DTD for a Bank Information document. Discuss elements, subelements and attributes with reference to DTD. | 6 |
| c | Explain in detail XQuery with suitable example. | 6 |

| Q.no. | Module 5 | Marks |
|----------------------|--|-------|
| 5.a | Explain BASE property of a transaction. | 4 |
| Answer b or c | | |
| b | Write about Graph databases in detail with examples. | 8 |
| c | Explain how to build Graph database application in detail. | 8 |

| Q.no. | Module 6 | Marks |
|----------------------|--|-------|
| 6.a | What is meant by log in Mobile databases? What is the relevance of log in Mobile database recovery system. | 4 |
| Answer b or c | | |
| b | Explain Handoff management in Mobile communication with diagram. | 8 |
| c | Explain various methods of transaction commitment in mobile database systems. | 8 |