

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA– SEMESTER –V EXAMINATION –SUMMER-2019

Subject Code: 2650004

Date: 08-05-2019

Subject Name: Advanced Data Base Management Systems

Time: 10.30 am to 1.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Do as Directed

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| i) State any one advantage of DBMS. | 01 |
| ii) List various ways to place records on disks. | 01 |
| iii) List any one decision made during physical database design for indexing. | 01 |
| iv) What is write-ahead Logging? | 01 |
| v) Define Terms: Database State, De-normalization, Dirty Bit | 03 |

(b) Say TRUE or FALSE with justification. 07

- i) Logical data independence is harder to achieve than physical data independence.
- ii) De-normalization is good for improving database performance.
- iii) Distribution transparency of distributed database refers to the logical placement of data.
- iv) Discard file of SQL*Loader contains records that are rejected.
- v) Delete and Truncate are DDL statements.
- vi) Double buffering improve block access time.
- vii) We have at most one primary, clustering or secondary index on a file.

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| Q.2 (a) i) Draw three schema architecture of database system. | 03 |
| ii) Differentiate between Logical and Physical Data Independence. | 04 |
| (b) Discuss how insert, update and delete operations should be implemented in transaction time databases. | 07 |

OR

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| (b) How time is represented in Temporal databases. Compare different time dimensions. | 07 |
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| Q.3 (a) List goals for database Tuning. Discuss the types of changes to SQL queries that may be worth considering for improving the performance. | 07 |
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- (b) What is Role Based access control? How it is superior to Discretionary Access Control (DAC) and Mandatory Access Control (MAC)? **07**

OR

- Q.3 (a)** Explain in brief Public Key Encryption and Digital Signatures. **07**
(b) Compare Primary index with Secondary index. **07**

- Q.4 (a)** What is difference between Distributed Database and Normal Database? **07**
Discuss advantages and disadvantages of Distributed databases.
(b) i) List various data management issues in Mobile databases. **03**
ii) Differentiate between Steal/No-steal and Force/No-Force concepts. **04**

OR

- Q.4 (a)** Explain Horizontal and Vertical data fragmentation using suitable example. **07**
(b) i) How proactive, retroactive and Simultaneous update differs? **03**
ii) List various types of multimedia data available in current systems. **04**
- Q.5 (a)** Explain the process of recovery in Distributed Database. **07**
(b) What is the difference between i) Delete and Truncate ii) insert and SQL*Loader. **07**

OR

- Q.5 (a)** List components of Oracle*Net. Explain Concept of Service Name and Listener. **07**
(b) Discuss the similarity and dissimilarity of deferred update and immediate update recovery techniques. **07**
