

## Sub: Database Management System

muadda.com

QP Code : 26692

(3 Hours)

[Total Marks: 80]

Note:

- Q1 is compulsory. Attempt any four out of remaining six questions.
- Assumptions made should be clearly stated.

- |   |    |   |    |
|---|----|---|----|
| 1 | a) | Construct an ER diagram for the online tour and travel system. Document all assumptions that you make for designing.  | 10 |
|   | b) | Create relational schema for the above ER diagram and normalize the same till 3NF.  | 10 |
| 2 | a) | Differentiate the following(Any two) <ul style="list-style-type: none"> <li>a) Dense Index and Sparse Index</li> <li>b) Primary Key, Unique Key and Foreign Key</li> <li>c) 2PL, Strict 2PL and Rigorous 2PL</li> </ul> | 08 |
|   | b) | Draw and explain the state diagram for the transaction in database  | 07 |
| 3 | a) | Explain and draw the architecture of DBMS   | 08 |
|   | b) | Explain log based recovery technique in database management system  | 07 |
| 4 | a) | What is deadlock? Explain the various deadlock detection and prevention techniques.   | 08 |
|   | b) | Explain the main responsibilities handle by DBA.  | 07 |
| 5 | a) | What is timestamp protocol? Explain how it is used for concurrency control in database  | 08 |
|   | b) | What is Bell-LaPadula model? Explain how it is used for database security.  | 07 |
| 6 | a) | What is B tree? Explain how it is used for enhancing the performance to fetch the data from database  | 08 |
|   | b) | Explain the heuristic approach for query optimization   | 07 |
| 7 |    | Write short note on the following (Any Three) <ul style="list-style-type: none"> <li>a) Aggregation</li> <li>b) Weak Entity</li> <li>c) Shadow paging</li> <li>d) Closure of attribute</li> </ul>                       | 15 |

muadda.com