

III B. Tech I Semester Regular/Supplementary Examinations, October/November - 2017**DATABASE MANAGEMENT SYSTEMS**

(Common to Computer Science Engineering and Information Technology)

Time: 3 hours

Max. Marks: 70

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- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answering the question in **Part-A** is compulsory
 3. Answer any **THREE** Questions from **Part-B**
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PART -A

- 1 a) What are the disadvantages in file system? [4M]
 b) Give syntaxes to Create and Alter a table. [4M]
 c) List aggregate functions supported by SQL. [3M]
 d) What is surrogate key? [3M]
 e) What is Deadlock? Write its conditions. [4M]
 f) Define single level and multilevel indexing. [4M]

PART -B

- 2 a) What is data independence? Discuss three tier schema architecture of data independence. [8M]
 b) Explain storage manager component. [8M]
- 3 a) Explain the role of views. Why role got importance? What are the problems in view updating? [8M]
 b) Give syntax for DML commands? Show their operations with an example? [8M]
- 4 a) Explain the following terms: [8M]
 (i) Entity and entity set.
 (ii) Attribute and attribute sets.
 (iii) Relationship and relationship sets.
 b) Define generalization and aggregation. Demonstrate generalization and aggregation using E-R diagram. [8M]
- 5 a) Explain 3NF with example and Compare BCNF and 3NF. [8M]
 b) Explain t 4NFs. How it is different from other normal forms? [8M]
- 6 a) Discuss write-ahead log protocol and check pointing. [8M]
 b) Explain Two Phase- Locking protocol .What benefit does strict two-phase locking protocol provides? Discuss its disadvantages. [8M]
- 7 a) Explain how B+ tree eliminate the redundant storage of search key values. [8M]
 b) Explain Dense and Sparse indices. [8M]

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PART -A

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|---|-----------------------------------------------------------|------|
| 1 | a) Explain object-oriented data model. | [4M] |
| | b) Differentiate between primary key and a candidate key. | [4M] |
| | c) List and Explain SET operations of SQL. | [3M] |
| | d) What is 3NF? | [3M] |
| | e) Why do we need locks? Explain. | [4M] |
| | f) What are the disadvantages of static hashing? | [4M] |

PART -B

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|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 2 | a) Explain briefly the languages supported by database systems. | [8M] |
| | b) What is Data modeling? Explain relational model. | [8M] |
| 3 | a) Why foreign key constraints are important? Explain with employee database. | [8M] |
| | b) What is meant by referential integrity? Explain. | [8M] |
| 4 | a) Where do we need nesting of queries? Give an example. | [8M] |
| | b) Differentiate between updatable views and non updatable views? | [8M] |
| 5 | a) Is the decomposition in 4NF always dependency preserving and lossless? Explain with an example, | [8M] |
| | b) Consider the following relation R(A,B,C,D,E) and FD's $A \rightarrow BC$, $C \rightarrow A$, $D \rightarrow E$, $F \rightarrow A$, $E \rightarrow D$ is the decomposition of R into R1(A, C, D), R2(B, C, D) AND R3(E,F,D) lossless? | [8M] |
| 6 | a) What is time stamp ordering? Explain how it is used for concurrency control? | [8M] |
| | b) Explain view Serializability with an example? How it is different from conflict Serializability? | [8M] |
| 7 | a) Explain Open hashing? Discuss their advantages and disadvantages. | [8M] |
| | b) Compare dynamic hashing with static hashing. | [8M] |
