

**III B. Tech I Semester Supplementary Examinations, October/November- 2018****DATABASE MANAGEMENT SYSTEMS**

(Common to Computer Science Engineering and Information Technology)

Time: 3 hours

Max. Marks: 70

- 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**

**PART -A**

- 1 a) List the disadvantages of file system. [4M]
- b) How to define a domain constraint? Give an example. [3M]
- c) What is a view? What is an updatable view? [4M]
- d) Does 3NF allow redundancy? Justify your answer. [4M]
- e) State Thomas write rule. [3M]
- f) Differentiate between sparse and dense index. [4M]

**PART -B**

- 2 a) How does DBMS provide data abstraction? Explain the concept of data independence. [8M]
- b) With a neat diagram describe the overall system structure of DBMS. [8M]
- 3 a) What is an integrity constraint? Explain its enforcement by DBMS with illustrative example. [8M]
- b) List the data types supported by SQL. [5M]
- c) Demonstrate the use of DISTINCT keyword in SQL select statement. [3M]
- 4 a) What is meant by existential dependency of an entity set? Explain with an example. [4M]
- b) Consider the following database schema to write nested queries in SQL [12M]
  - Supplier (id, name, city)
  - Parts(pno, pname, pdescription)
  - Supply(id, pno, cost)
  - i) Find the names of the parts supplied by "RamRaj"
  - ii) Find the names of the suppliers who supply "Nuts"
  - iii) Find the cost of bolts being supplied by Nagpur suppliers.
- 5 a) Discuss the problems caused by redundancy and the purpose of normalization. [10M]
- b) Give relation schemas for the following normal forms [6M]
  - i) 2NF but not in 3NF      ii) 3NF but not in BCNF
- 6 a) Does two phase locking protocol ensure conflict serializability? Justify your answer with appropriate examples. [8M]
- b) Write PL/SQL procedure to read student roll number from user, fetch marks from student table for this student, compute grade and update the grade column of the table. [8M]
  - STUDENT(roll number, name, marks1, marks2, marks3, marks4, grade)
  - [ follow regular convention for student grades(A,B,C,D,F) ]
- 7 a) Make a comparison of hash file organization with heap file organization. [6M]
- b) Demonstrate bulk loading of B+ tree of order 3 with the following data (key\*) [10M]
  - 56\*, 32\*, 18\*, 72\*, 45\*, 16\*, 98\*, 83\*, 81\*, 27\*, 39\*, 51\*, 66\*, 44\*, 33\*, 22\*

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