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FORTH SEM

Roll No. [redacted]
B.TECH(CO/IT)

MID SEMESTER EXAMINATION

MARCH 2017

CO/IT-202 DATABASE MANAGEMENT SYSTEM

Time: 1 Hour 30 min.

Max. Marks : 30

Note : Answer any four
Assume suitable missing data, if any.

Q1. (a) What is DBMS? What are the characteristics of DBMS? 3
(b) What are the steps to map E-R model to relational model? 3

Q2. (a) Explain logical and physical indepenance. 3
(b) Draw E-R diagram for a library system which is serving students and faculty of DCE. It is having book bank, reference section and reports collection. 3

Q.3 (a) define the terms 4
(i) Entity set (ii) specialization
(iii) cardinality (v) Entity Integrity
(b) Explain the operations of Relational Algebra. 3

Q.4 Consider the following relation for published books
Book(Book_title,Author_name,Book_type,List_price,author_affil, publisher)
Author_affil refers to affiliation of author. Suppose the following dependencies exist:-
Book_title -> publisher, book_type
Book_type -> list_price
Author_name -> author_affil

a) What NF is the relation in? Explain your answer. 2
b) Apply normalization until you cannot decompose the relation further. State the reason for each decomposition. 2
c) Find the candidate keys using implied rules 2

Q5 (a) Write the SQL queries for the relation 3

Books(title,author,book_id,year_publication)

(i) Books whose author name starts with 'M' but does not end with 'M'.
(ii) Book with the second largest year of publication.
(iii) Books published between 1990-2000 but not in year 1990 and 2000

(b) Define a trigger that inserts a row in a books_duplicate table(with the same schema as Books) whenever a delete is performed over Books relation. 3