Registration No:

Total Number of Pages: 02 **B.TECH**

FEEC6301

5th Semester Regular / Back Examination 2015-16
DATA BASE MANAGEMENT SYSTEMS
BRANCH: AEIE,EC,EEE,EIE,ELECTRICAL,ETC,IEE

Time: 3 Hours

Max Marks: 70

Q.CODE: T655

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: **(2 x 10)**

a) What is the difference between a data definition language and data manipulation language?

b) What is logical data independence and why is it important?

c) Define 3NF and 2NF.

d) Why BCNF is stronger than 3NF?

e) Describe the purpose of normalizing data.

f) What is two phase locking?

g) What is ACID property?

h) What is domain and how is it related to a data value?

i) A relation R (A, B, C, D) has FDs A→C.Is R is in 3NF?

j) What is transaction log? What are its functions?

Q2 **a)** Describe the main characteristics of the database approach in contrast with the file oriented approach? **(5)**

b) Who is a DBA? What are the responsibilities of a DBA? **(5)**

Q3 **a)** What do you mean by a data model? Describe the different types of data models used. **(5)**

b) What is a timestamp ordering? What are the variants of timestamp ordering? **(5)**

Q4 Explain the following

a) Why R1 is In 1NF but not in 2NF ,whereR1 {A,B,C,D} contains set of FDs F={B→D,AB→C} **(5)**

b) WhyR2 is in 2NF but not in 3NF whereR2{A,B,C,D,E} contains set of FDs {AB→CE,E→AB,C→D} **(5)**

Q5 Consider the following relations and write the queries in a Relational algebra, Tuple calculus and SQL expression
Employee (emp-name, street, city)
Works (emp-name, company-name, salary)

a) Find the salary of employees whose city at Delhi. **(5)**

b) Find details of employees whose company name Wipro. **(5)**

Q6 **a)** Discuss the different types of transaction failures that may occur in the database environment. **(5)**

b) What is meant by forward and backward recovery? **(5)**

Q7 **a)** Discuss the transition execution state with a state transition diagram and related problems. **(5)**

b) Using an example, illustrate how Two- phase locking works. **(5)**

Q8 Write short notes on any two: **(5 x 2)**

a) Meta data
b) Query Optimization
c) Canonical Cover
d) Lossless Design