Registration No : | | | | | | | | | | |

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

PET8J004

8th Semester Regular Examination 2018-19
DATABASE MANAGEMENT SYSTEM
BRANCH : ECE, ETC
Max Marks : 100
Time : 3 Hours
Q.CODE : F009

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1 **Only Short Answer Type Questions (Answer All-10)** **(2 x 10)**

a) State data independence and its types.
b) Determine the users who are under logical level of data abstraction.
c) Why & where "Is-A" relationship is used?
d) State Query evaluation engine.
e) Why BCNF is known as relaxed form of 3NF?
f) Since every conflict-serializable schedule is view serializable, why do we emphasize conflict serializability rather than view serializability?
g) Explain the difference between an exclusive lock and a shared lock?
h) Define System Catalog.
i) Distinguish between OLAP and OLTP.
j) Write about homogeneous and heterogeneous distributed database.

Part- II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) Explain the advantages of data base management system over file management system.
b) Design an E-R diagram for keeping track of the exploits of your favorite sports team. You should store the matches played, the scores in each match, the players in each match, and individual player statistics for each match. Summary statistics be modeled as derived attributes. Find out the entities.
c) Illustrate CODD's 12 rule with explanation.
d) Consider the insurance databases:
Person(driver_id, name, address)
Car(license, model, year)
Accident(report_no, date, location)
Owns(driver_id, license)
Participated(report_no, license, driver_id, damage_amount)
Construct expressions in relational calculus for each query:
I. Find the people who owned cars that were involved in accidents.
II. Find the drivers who made accident and their report no and damage amount
III. Find the person details and car details who did the accident at "ParkStreet"
IV. Find the person name & license details & report no of the accidents.
e) Specify the rules for converting E-R model into relational model.
f) Explain types of keys and disjoint, overlapping constraints used in E-R model.
g) Analyze how different states of a transaction define that it is being executed or not?
h) Determine the properties of a transaction?
i) Explain the types of data ware house and the steps needed to build a data ware house.
j) What are the various locking methods used in Data Security?
k) What do you understand by query optimization? Formulate the steps needed to optimize a high level query?
l) Explain cascade less schedule with an example.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3 What are the factors of DBMS? Explain data independence in 3-levels of data abstraction. **(16)**

Q4 Discuss why concurrency control is needed in RDBMS? Explain the problems that would arise when concurrency control is not provided by the database system? Give example. **(16)**

Q5 Enlist the advantages of normalizing database. Consider the following relation R (A,B,C,D,E) and functional dependencies F= { A->BC, C->A,D->E, F->A, E->D } & decomposed R into R1(A, C, D), R2(B, C, D) and R3(E,F,D). Is it lossless or not? **(16)**

Q6 Briefly describe about the different types of data base recovery techniques. **(16)**