[5153]-593

T.E. (Information Technology)
DATABASE MANAGEMENT SYSTEMS
(2012 Pattern) (Semester - I) (Endsem)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:
  1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.*
  2) *Neat diagrams must be drawn wherever necessary.*
  3) *Figures to the right side indicate full marks.*
  4) *Use of Calculator is allowed.*
  5) *Assume Suitable data if necessary.*

Q1) a) Explain the distinctions among the terms primary key, candidate key and super key with example. **[4]**

   b) List different components used in E-R diagram with their meaning and construct an E-R diagram for a car insurance company whose customers own one or more cars each. Each car has associated with it zero to any number of recorded accidents. Each insurance policy covers one or more cars, and has one or more premium payments associated with it. Each payment is for a particular period of time, and has an associated due date, and the date when the payment was received. **[6]**

OR

Q2) a) What is deadlock? List the different deadlock prevention schemes. Is starvation still possible? Explain your answer. **[4]**

   b) State the need of normalization? Explain 1NF, 2NF and 3NF with example. **[6]**

Q3) a) Explain different DDL and DML commands with example. **[6]**

   b) Explain Transaction Control Commands in SQL with example. **[4]**

OR

Q4) a) What is serializable schedule? Explain with suitable example the types of serializable schedules. Also explain the significance of precedence graph. **[5]**

b) What is Transaction? Explain ACID properties of transaction. **[5]**

Q5) a) Draw and explain distributed system architecture. **[8]**
b) Draw and explain Internet database systems. **[8]**

OR

Q6) a) Explain two-tier and three-tier architecture. **[8]**
b) Explain Data fragmentation and data replication with suitable example with respect to distributed database systems. **[8]**

Q7) a) What is big data? Explain properties of big data. **[8]**
b) What is XML? Explain structure of XML data. **[8]**

OR

Q8) a) What is the significance of Hadoop system? Explain characteristics of hadoop. **[8]**
b) Explain Hbase data model with its architecture. **[8]**

Q9) a) Define Teradata and explain architecture of Teradata. **[9]**
b) Explain: **[9]**
 i) Mobile Database and ii) SQLite

OR

Q10) Write short note on (Any three): **[18]**
 a) Data mining.
 b) Cloud computing
 c) Machine Learning System Model
 d) Data Warehouse.

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