Mid Semester Exam   Mar-2019
Fourth Semester   B.Tech.COE
.CO202 Database Management System
Duration: 1.5 Hrs.   Max Marks: 30

NOTE: Attempt all the questions. Assume the missing data if any. ·

Q1.Given the relational schemas: (2.5x2)

employee (person_name, street, city)
works (person_name, company_name, salary)
company (company_name, city)
manages (person_name, manager_name)

Give the expressions in relational algebra with explanation for the following queries:
(a) Find the names of all employees who live in the same city and on the same street as do their managers.
(b) Give all managers in this database a 20 percent salary raise.

Q2.Using a two-dimensional array of size n x m, illustrate the differences (a) in the three levels of data abstraction and (b) between a schema and instances.   (4)

Q3. Draw an ER diagram for a garment manufacturing company. The entity includes warehouses, production units, marking wing, vendor and product types. Define the relationship between each of these entities and take the appropriate attributes.   (6)

Q4. a) Explain the normal forms due to functional dependencies.   (5)
(b) Consider the following relation schema and set F of functional dependencies
$$R = (A, B, C, D, E).$$ (5)

$$A \rightarrow BC$$
$$CD \rightarrow E$$
$$B \rightarrow D$$
$$E \rightarrow A$$

$P \cdot T \cdot O$ ·

List the candidate keys for R.

Q5. Differentiate between: (2.5x2)
   a) Procedural and non-procedural DMLs
   b) Disjoint and overlapping generalization

END