PGIIS-N 1029 A-2K14

M.Sc IInd Semester (CBCS) Degree Examination
Computer Science
(Database Management System)
Paper - HCT-2.2
(New)

Time :3 Hours   Maximum Marks : 80

Instructions:

1.   All questions in Section A are compulsory

2.   Answer any five questions from section-B

Section- A

I.   Answer the following   **(10x2=20)**

1.   a)   Define the terms Database and Data model.

b)   Distinguish between logical view and conceptual view of database

c)   Give two examples of binary relationships involving the same entity sets.

d)   State entity integrity rule. Why it is essential

e)   Give the following relations compute $P \div Q$

P(1P)		Q(1Q)
A	B	B
a_1	b_1	b_1
a_1	b_2	b_2
a_2	b_1	

f)   Given the relation scheme employee (emp-no, name, pay-rate, skill). Write SQL query for "Find the employees with the lowest pay rate

g)   Given   R=(A,B,C,D)   and   set   of   FOs
$F = \{A \rightarrow B, A \rightarrow C, BC \rightarrow D\}$ *show that F implies* $A \rightarrow D$

h)   Give an example for multivalued dependency

i)   What are checkpoints?

j)   State the types of distributed database system

Answer any five questions

2. a) Describe three-schema proposal for DBMS with illustrative example

   b) Briefly describe the functions of query processor and data manager components of DBMS   (6+6)

3. a) With the help of E-R diagram explain generalization and specialization

   b) Given the following relations describe the relational algebra operations to be performed to find salary of employees by name

Employee			Salary	
ID	Name		ID	salary
101	Jones		101	67
103	Smith		103	55
104	Lalonde		104	75

(6+6)

4. a) Give examples for the following SQL built in functions count, sum, avg

   b) Views that involve a join may or may not be updatable:Discss   (6+6)

5. a) Describe the lost update problem in case of interleaving of operations of concurrent transactions.

   b) Explain how two-phase locking scheme guarantees senalizability of schedules (6+6)

6. a) Discuss the types of security and integrity threats to the database.

   b) Describe recovery technique using logs in a centralized DBMS   (6+6)

7. a) Describe the characteristics of object oriented data model

   b) What are the advantages of distributed databases   (6+6)

8. Write short notes on the following

   a) BCNF

   b) Query optimization   (2x6=12)