

AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Course No: CSE4125

Course Title: Distributed Database Systems

Fall 2019 | Quiz – 3 | Marks 10 | Time: 30 Minutes

1. Consider the following global and fragmentation schemata.

Global Schema:

DOCTOR (DNUM, NAME, DEPT)

PATIENT (PNUM, NAME, DEPT, TREAT, DNUM)

CARE (PNUM, DRUG, QUAN)

Fragmentation schema:

$DOCTOR_1 = SL_{DEPT = "SURGERY"} DOCTOR$

$DOCTOR_2 = SL_{DEPT = "PEDIATRICS"} DOCTOR$

$DOCTOR_3 = SL_{DEPT \neq "SURGERY" \text{ AND } DEPT \neq "PEDIATRICS"} DOCTOR$

$PATIENT_1 = SL_{DEPT = "SURGERY" \text{ AND } TREAT = "INTENSIVE"} PATIENT$

$PATIENT_2 = SL_{DEPT = "SURGERY" \text{ AND } TREAT \neq "INTENSIVE"} PATIENT$

$PATIENT_3 = SL_{DEPT \neq "SURGERY"} PATIENT$

$CARE_1 = CARE \text{ SJ}_{PNUM = PNUM} PATIENT_1$

$CARE_2 = CARE \text{ SJ}_{PNUM = PNUM} PATIENT_2$

$CARE_3 = CARE \text{ SJ}_{PNUM = PNUM} PATIENT_3$

Assume that a patient is always assigned to the same department as his or her doctor. Attribute DNUM and PNUM indicates Department Number and Patient Number respectively. **Draw the join graphs of the following joins and classify them:**

- | | | |
|----|---|-----|
| a. | DOCTOR JN _{DNUM = DNUM} PATIENT | 1 |
| b. | DOCTOR JN _{NAME = NAME} PATIENT | 1 |
| c. | DOCTOR JN _{DEPT = DEPT} PATIENT | 1 |
| d. | PATIENT NJN CARE | 1 |
| | | |
| 2. | Write down the differences between Vertical Partitioning and Vertical Clustering . | 2 |
| | | |
| 3. | What is the top – down approach to design a distributed database system? Does this approach satisfy Heterogeneous Data Distribution ? Explain your answer. | 2+2 |