

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

Course No: CSE4125

Course Title: Distributed Database Systems

Spring 2020 | Quiz – 2 | Marks 30 | Time: 30 + 5 Minutes

Consider the global relational schema:

**Hospital (HNAME, HID, CITY, MGRID, CAPACITY, CHARGE, RATINGS)**

Given the following fragmentation schema:

$Hospital_1 = PJ_{HNAME, HID, CITY, MGRID} (Hospital)$

$Hospital_2 = SL_{CAPACITY < 500} PJ_{HID, CAPACITY, CHARGE, RATINGS} (Hospital)$

$Hospital_3 = SL_{RATINGS < 10} SL_{CAPACITY \geq 500} PJ_{HID, CAPACITY, CHARGE, RATINGS} (Hospital)$

$Hospital_4 = SL_{RATINGS \geq 10} SL_{CAPACITY \geq 500} PJ_{HID, CAPACITY, CHARGE, RATINGS} (Hospital)$

- 1a.** Draw the fragmentation tree. 10
- 1b.** Write the reconstruction formula to obtain **Hospital** from the fragments. 10
- 1c.** Suppose the hospital having **HID = 15**, has done some new construction. Its capacity is improved from **450 to 600**. Write an application that does the necessary updates at **Level - 2** of distribution transparency. 10

***P.S: No extra writing. Only draw a tree, only write a single line formula, and only write the level-2 code.***