

CSCI3170 Short Assignment #3

(Deadline: Nov 17, 23:59)

Name:

Pass / Fail

Student ID:

1. Consider the following relation and functional dependencies:

$R(a,b,c,d)$

$F = \{a \rightarrow b, c \rightarrow d\}$

- a) Give a BCNF decomposition of R . Please show your steps.

- b) Prove that your decomposition is a lossless-join decomposition.

2. Consider the following relation and functional dependencies:

$$R(a,b,c,d,e)$$
$$F = \{ab \rightarrow cd, c \rightarrow d\}$$

a) List the candidate key of R

b) Find the canonical cover of F

c) Give a 3NF decomposition of R. Briefly explain your answer.