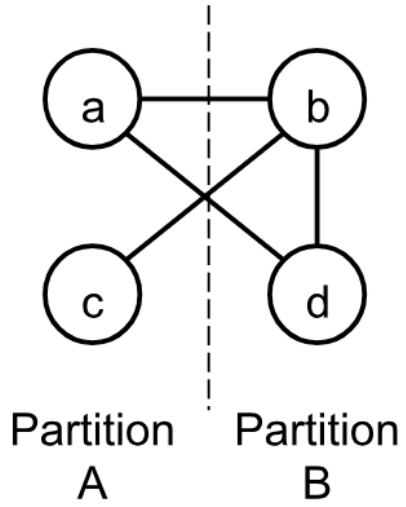
BRAC UNIVERSITY
CSE460
VLSI DESIGN
Quiz - 2
Time: 30 minutes
Set-A

Name: ***ID:*** ***Section:***

Question 1: [10 Marks]

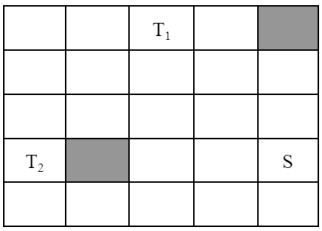
The graph below (nodes a-d) can be optimally partitioned using the Kernighan-Lin algorithm. The dotted line represents the initial partitioning. Assume all the edges have the same weight.

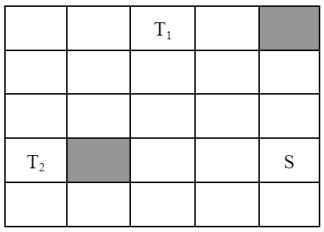


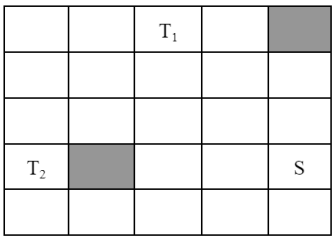
a. Calculate the initial cut cost. (1)
b. How many iterations will there be in the first pass (pass is the outer loop)? (1)
c. Perform the first pass of the KL algorithm. Identify the optimized partition. (7)
d. Are any further passes necessary? State the reason for your answer. (1)

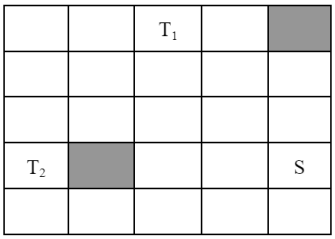
Question 2: [10 Marks]

a. Use Lee's Maze algorithm to find the shortest path between S and the Ts avoiding obstacles. Dark regions are obstacles or components. **Show every iteration in separate squares. Use consecutive numbers to denote the grids in every iteration.** (6)









b. What is the memory requirement? (2)

c. What would have been the memory requirement if we denoted the grids as "1,2,3,1,2,3,....." (1)

d. What would have been the memory requirement if we denoted the grids as "0,0,1,1,0,0,1,1,....." (1)