

Name: ..... SSN: ..... Row: ..... L R

**Instructions:** Use only the notation used in class and in the textbook.

**NOTE:** *If you do not follow the instructions above, you may lose some points.*

**Question 1:** (6 points) Let  $G$  be a simple graph with  $n$  vertices and  $\alpha$  edges, how many edges does  $\overline{G}$  have?

**Question 2:** (6 points) Let  $n$  be a natural number greater than or equal to 2. What is the degree sequence of  $K_n$ ?

**Question 3:** (6 points) Let  $m$  and  $n$  be natural numbers greater than or equal to 2. For what values of  $m$  and  $n$  does  $K_{m,n}$  have an Euler cycle (if any)?

**Question 4:** (2 points) If a graph  $G$  has a degree sequence of 3,2,1,1,1,0,0. How many vertices does  $G$  have and how many edges does  $G$  have?

**Number of vertices of  $G$  is:** .....

**Number of edges of  $G$  is:** .....