Part I: Introduction

1. What is a system design?

2. What is flow in relation to a system design?

3. Give two examples of systems where you have witnessed a lack of flow.

4. What are some disadvantages of having lack of flow in a system design?

Part II: Hands-On Activity: Patient Flow Simulation

(See your teacher for instructions and materials.)
Part III: Data Analysis

(Complete Part III with the other students assigned to your Exam Room.)

Answer the following questions using the histograms created by the engineer at your station.

First Run Histogram

1. What is the minimum number of patients at any given time interval? _____
   How many intervals have that number of patients? _____________

2. Are there any intervals with 0 patients? __________ Why would that be a disadvantage? ______
   ______________________________________________________________________________

3. What is the maximum number of patients at any given time interval? _________
   How many intervals have that number of patients? ________________

4. Are there any intervals with 3 or more patients? _________ Why would that be a disadvantage? __
   ______________________________________________________________________________

5. Over the course of the 1-hour simulation, in how many 5-minute intervals are patients being serviced? (How many intervals have at least one patient?) ______

6. Over the course of the 1-hour simulation, in how many 5-minute intervals are patients waiting? (How many intervals have more than one patient?) ____________
Second Run Histogram

1. What changes were made to the system design for the second run?____________________________________
   ______________________________________________________
   ______________________________________________________

2. What is the minimum number of patients at any given time interval? __________
   How many intervals have that number of patients? __________

3. What is the maximum number of patients at any given time interval? __________
   How many intervals have that number of patients? __________

4. Over the course of the 1-hour simulation, in how many 5-minute intervals are patients being
   serviced? (How many intervals have at least one patient?) ______

5. Over the course of the 1-hour simulation, in how many 5-minute intervals are patients waiting?
   (How many intervals have more than one patient?) __________

6. Are these results better than the results from the First Run? __________Explain.___________
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________

7. What other changes can be made to the system design for a better patient flow? ____________
   ______________________________________________________
   ______________________________________________________