Instructions:

1. OPEN NOTES AND CLOSED BOOK.

2. The instructor subscribes to and supports the Mercer Honor Code.

3. Show all work on the paper provided.

4. Do not discuss test with anyone other than the instructor.

5. There are a total of 10 problems with each problem worth 10 points.

Name: _______________________________ Date: _______________
1. (10 pts) Determine the sum of the following sound levels (all in dB): 68; 82; 76; 68; 74; and 81.

2. (10 pts) List five sources of community noise.

3. (10 pts) A town with a population of 10,000 produces solid waste at a rate of 5 lb/capita-day. If the waste is compacted to 1000 lb/yd$^3$, how many acre-ft of landfill is needed? 1 acre = 43560 ft$^2$

4. (10 pts) What volume (yd$^3$) of cover soil is needed in a year assuming that the ratio of solid waste to cover material is 4:1?
5. (10 pts) Is it possible to eliminate the construction of new sanitary landfills and incinerators through recycling and recovery of solid waste? Briefly address this issue in a paragraph or two.

6. (10 pts) Strontium-90 has a half-life of 29 years. How long would a given amount of Strontium-90 have to be stored to obtain a 99.9 % reduction in quantity?

7a. (5 pts) How many neutrons does Argon-40 contain?

7b. (5 pts) How many electrons does Argon-40 contain? Atomic number of Ar is 18.
8. (10 pts) Given the following street network, design the most efficient route possible if the truck is collecting MSW from both sides of the street at the same time.

9. (10 pts) List five components found in MSW?

10. (10 pts) List five hazardous wastes.