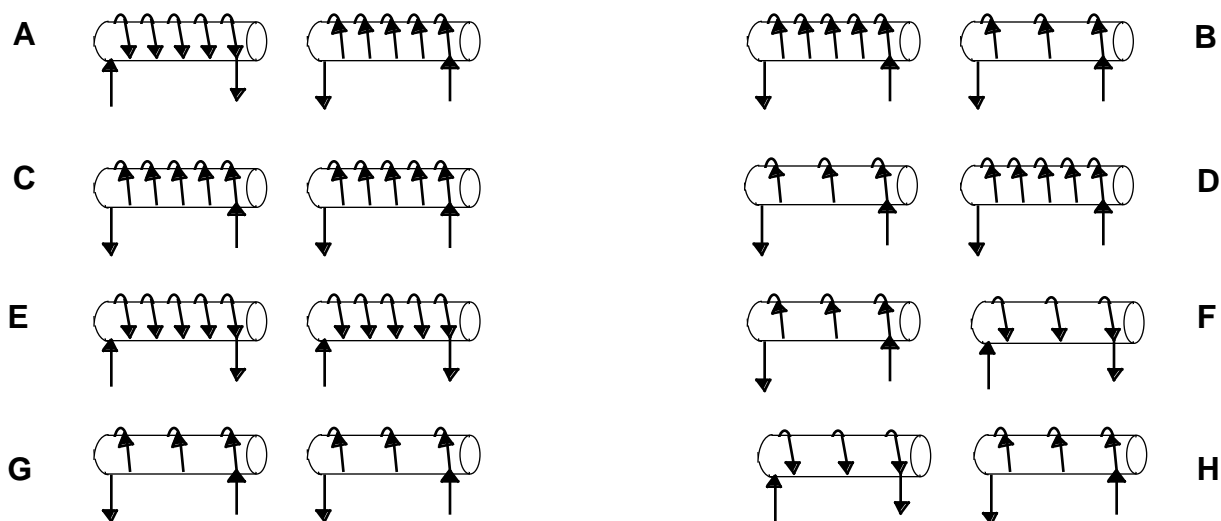


## Pairs of Equal Current Electromagnets—Force<sup>186</sup>

Eight pairs of electromagnets are shown below. The same current flows in each case. The pairs of electromagnets are separated by the same distance, and they have the same length and diameter. Carefully observe the orientation of the coil and direction of current flow.

Rank the forces between the magnets from the most attractive to the most repulsive.



Most Attractive    1\_\_\_\_ 2\_\_\_\_ 3\_\_\_\_ 4\_\_\_\_ 5\_\_\_\_ 6\_\_\_\_ 7\_\_\_\_ 8\_\_\_\_    Most Repulsive

Or, all of these pairs exert equal forces on each other. \_\_\_\_\_

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed

Sure

Very Sure

1      2      3      4      5      6      7      8      9      10

<sup>186</sup> B. Emerson, C. Hieggelke