Valence Shell Electron Pair Repulsion Theory

There are 12 different Question Groups. Each question in the same group includes the same three compounds and formulas. The order in which the formulas are presented varies from question to question. There are three difficulty levels. The difficulty levels differ in terms of how many questions there are and the sophistication of the formulae and Lewis structures.

Apprentice Difficulty Level: includes Question Groups 1-4 Master Difficulty Level: includes Question Groups 1-8 Wizard Difficulty Level: includes Question Groups 1-12

Question Group 1

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

CO₂ H₂O SCI₂

Question Group 2

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

NH₃ BH₃ CO₃ ²⁻

Question Group 3

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

BCl₃

H₃O ⁺ PCl₃

Question Group 4

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

XeF₄ CF₄ CCl₄

Question Group 5

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

BCl ₃ NCl ₃	PF₃
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SO₂

3

Question Group 6

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

 XeF_2

Question Group 7

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

O3

Question Group 8

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

SO₂

CO₂

XeF₂

O₃

Question Group 9

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

SF₄ CCl₄ SO₄ ²⁻

Question Group 10

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

SO₂ XeF₂ I₃-

Question Group 11

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

CIF₃ CO₃²⁻ NO₃⁻

Question Group 12

One of these molecules has a shape that is not like the others. Which one doesn't belong? Begin by identifying the correct Lewis electron dot structure. Then identify the one structure that leads to a molecular shape that is different than the other two.

 XeF_4

SF₄ Br

BrF4 +