Chapter 11 Homework: VSEPR and Valence Bonding

1.Select all the polar molecules.  
https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif

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|  | a. | BrF5 |
|  | b. | BF3 |
|  | c. | PF6− |
|  | d. | IF4− |
|  | e. | NH4+ |
|  | f. | CH2F2 |
| Select all the polar molecules. https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | I3− | |  | b. | IF3 | |  | c. | TeF42− | |  | d. | SeF4 | |  | e. | ClO3− | |  | f. | ClO4− | | What is the molecular geometry for AsCl4+? https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | trigonal planar | |  | b. | tetrahedral | |  | c. | square planar | |  | d. | see-saw | |  | e. | trigonal pyramidal | |  | f. | trigonal bipyramidal | | What is the molecular geometry for I3−? https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | trigonal bipyramidal | |  | b. | tetrahedral | |  | c. | bent | |  | d. | trigonal planar | |  | e. | trigonal pyramidal | |  | f. | linear |   Select all the molecules that have tetrahedral molecular geometry. https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | BF4− | |  | b. | CHCl3 | |  | c. | SF4 | |  | d. | XeF4 | |  | e. | TeF42− | |  | f. | PO43− |   What hybrid orbitals are used by the central atom in IF3? https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | sp2 | |  | b. | sp3 | |  | c. | sp3d2 | |  | d. | sp3d | |  | e. | sp | | Select all the polar molecules. https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | ClO3− | |  | b. | BF3 | |  | c. | PH3 | |  | d. | ClF3 | |  | e. | I3− | |  | f. | SO3 | | What is the molecular geometry for IF2+? https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | bent | |  | b. | T-shaped | |  | c. | tetrahedral | |  | d. | see-saw | |  | e. | linear | |  | f. | trigonal planar | | What hybrid orbitals are used by the central atom in I3−? https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | sp3 | |  | b. | sp2 | |  | c. | sp3d2 | |  | d. | sp3d | |  | e. | sp |   What is the molecular geometry for ClO2−? https://webcttoday.sunybroome.edu/web-ct/en/img/shim.gif   |  |  |  | | --- | --- | --- | |  | a. | tetrahedral | |  | b. | bent | |  | c. | linear | |  | d. | trigonal bipyramidal | |  | e. | trigonal pyramidal | |  | f. | trigonal planar | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  |
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