

AP Chemistry: Lewis Structures and VSEPR Theory Practice

1. Draw the Lewis structure for CO_2 . What is the molecular geometry according to VSEPR theory?
2. Determine the Lewis structure for NH_3 and state the molecular shape.
3. For the molecule SO_2 , draw the Lewis structure and predict the bond angle.
4. What is the Lewis structure and VSEPR shape of CH_4 ?
5. Draw the Lewis structure of BF_3 and describe its geometry.
6. Determine the Lewis structure of H_2O and state the molecular geometry.
7. Draw the Lewis structure for NO_3^- and determine its resonance structures.
8. What is the geometry of PCl_5 according to VSEPR theory? Draw its Lewis structure.
9. Draw the Lewis structure of ClF_3 and determine the molecular shape.
10. Predict the shape of SF_6 using VSEPR and draw its Lewis structure.
11. Determine the Lewis structure of XeF_4 and state its molecular geometry.
12. Draw the Lewis structure and predict the shape of BrF_5 .
13. What is the molecular geometry of I_3^- and what does its Lewis structure look like?
14. Draw the Lewis structure of C_2H_4 (ethene) and describe its molecular geometry.
15. For the molecule C_2H_2 (ethyne), draw the Lewis structure and predict the geometry.
16. Determine the Lewis structure of CH_2Cl_2 and state its geometry.
17. Draw the Lewis structure of O_3 and explain its resonance.
18. What is the shape and Lewis structure of NH_4^+ ?
19. Draw the Lewis structure and predict the geometry of HCN .

20. Determine the Lewis structure and molecular shape of PF_3 .