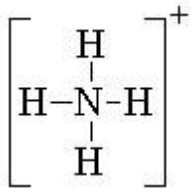
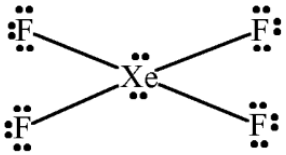
VSEPR Practice

Pg. 236 #11-20

11. a) AX_3 trigonal planar b) AX_5E square pyramidal

12. a) 32 b) 24

13. a) 4BP, 0LP  b) 2 BP, 0 LP  c) 4 BP, 2 LP 

d) 2 BP, 1 LP

14. bent

15. trigonal pyramidal

16. tetrahedral

17. tetrahedral, 109.5°

18. trigonal planar

19. $BF_3(g)$: 3 BP, 0 LP, bond angle = 120°
$BeF_2(g)$: 2 BP, 0 LP, bond angle =180°
$CF_4(g)$: 4 BP, 0 LP, bond angle = 109.5°
$NF_3(g)$: 3 BP, 1 LP, bond angle <109.5°
$OF_2(g)$: 2 BP, 2 LP, bond angle <<109.5° OF_2, NF_3, CF_4, BF_3, BeF_2

20. $PCl_5(g)$ has the VESPR notation AX_5 and thus its shape is trigonal bipyamidal.
PCl_4+(s) has the VESPR notation AX_4 and thus its shape is tetrahedral.
PCl_6-(s) has the VESPR notation AX_6 and thus its shape is octahedral.

Pg. 237 #31,32,34-36

31. 4 groups sp3

32. 5 groups sp3d

34. a)4 groups sp3 b)sp3

35. 6 groups sp3d2

36. 5 groups sp3d