ANSWERS TO UNIT IV : INORGANIC NOMENCLATURE

Self–Test (a) Na (b) potassium (c) Tl (d) mercury (e) Si (f) krypton (g) F (h) chromium (i) S (j) cesium (k) Cd (l) beryllium (m) As (n) molybdenum (o) Pt (p) copper (q) W (r) lead (s) At (t) boron

1. (a) A, P (b) N, T, P (c) C, M (d) A, D, P (e) C, P (f) N, M
2. (a) copper(I) ion (b) chromium(III) ion (c) tungsten(VI) ion
3. (a) Co^{3+} (b) Ni^{2+} (c) V^{5+}
4. (a) $Sn(SO_4)_2$ (b) $(NH_4)_2C_2O_4$ (c) Li_2O (d) Cu_3N (e) $Hg_2(NO_2)_2$ (f) $Fe(OH)_3$ (g) Ag_2SO_4 (h) $Pb(ClO_4)_2$ (i) Cr_2O_3 (j) MnF_2 (k) KH_2PO_4 (l) $U(SO_4)_2$ (m) $(NH_4)_2Cr_2O_7$ (n) Cu_3PO_4 (o) $Ca(ClO)_2$ (p) $NaHSO_3$ (q) $Mg(MnO_4)_2$ (r) WBr_5 (s) $(NH_4)_3PO_4$ (t) $Hg(CH_3COO)_2$
5. (a) silver phosphate (b) aluminum sulphate (c) iron(III) sulphide (d) copper(I) chloride (e) ammonium carbonate (f) vanadium(III) chloride (g) mercury(I) carbonate (h) copper(II) sulphate (i) ammonium sulphide (j) ammonium hydrogen carbonate (k) iron(II) oxalate (l) magnesium hydrogen sulphite (m) lithium chlorite (n) sodium monohydrogen phosphate (o) aluminum hydroxide (p) chromium(III) iodide (q) tin(IV) oxide (r) zinc dichromate (s) vanadium(V) oxide (t) strontium nitride
6. (a) iron(III) bromide hexahydrate (b) lithium dichromate dihydrate (c) aluminum oxide trihydrate (d) cobalt(II) fluoride tetrahydrate (e) sodium carbonate monohydrate (f) sodium sulphide nonahydrate (g) sodium sulphate decahydrate (h) nickel(II) phosphate octahydrate (i) magnesium monohydrogen phosphate heptahydrate
7. (a) $FePO_4 \cdot 8H_2O$ (b) $Cd(NO_3)_2 \cdot 4H_2O$ (c) $Cu_3(PO_4)_2 \cdot 3H_2O$ (d) $CrC_2O_4 \cdot H_2O$ (e) $NiCl_2 \cdot 6H_2O$ (f) $Al(NO_3)_3 \cdot 9H_2O$
8. (a) nitrogen dioxide (b) chlorine trifluoride (c) tetrasulphur dinitride (d) diphosphorus hexoxide (e) dinitrogen trioxide (f) sulphur tetrafluoride (g) bromine monofluoride (h) sulphur hexafluoride
9. (a) SO_3 (b) PCl_5 (c) XeF_6 (d) OF_2 (e) CO (f) CCl_4 (g) P_4S_3 (h) N_2S_5 (i) Si_3N_4
10. yellow = chromate; blue = copper(II). Therefore: $CuCrO_4$ = copper(II) chromate
11. iron(II) became iron(III)
12. (a) colourless (b) purple (c) blue (d) colourless (e) orange (f) pale pink
13. bright green = nickel(II); this positive ion will have to react with the negative ion, carbonate, in the potassium carbonate solution. Therefore: nickel carbonate = $NiCO_3$
14. magnesium oxide
15. copper(II) sulphate
16. sodium acetate
17. ammonium nitrite
18. molybdenum(V) chloride
19. lithium hydroxide monohydrate
20. platinum(IV) chloride
21. ammonium perchlorate
22. aluminum nitride
23. potassium permanganate
24. copper(I) sulphate
25. sulphuric acid
26. sodium carbonate decahydrate
27. sodium sulphite
28. lead(IV) hydrogen sulphate
29. tungsten(VI) fluoride
30. sodium dihydrogen phosphate
31. barium sulphide
32. ammonium chlorite
33. iron(II) hypochlorite
34. tin(II) cyanide
35. krypton difluoride
36. sodium phosphate
37. calcium sulphide
38. manganese(II) thiocyanate
39. silver permanganate

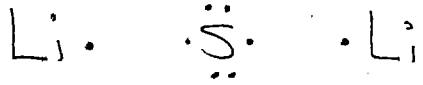
40. platinum(III) oxide trihydrate
41. phophorus pentabromide
42. copper(II) acetate
43. aluminum perchlorate
44. ammonia nitrogen trihydride
45. aluminum sulphide
46. sodium hydroxide
47. barium hydrogen sulphide tetrahydrate
48. dinitrogen monoxide
49. nitric acid
50. cesium hydrogen carbonate
51. copper(I) sulphide
52. tricarbon disulphide
53. copper(II) nitrate hexahydrate
54. cobalt(II) chlorate
55. manganese(III) oxide
56. zinc acetate
57. acetic acid
58. manganese(III) phosphate
59. chromium(III) nitrate nonahydrate
60. strontium hypochlorite
61. vanadium(III) nitride
62. lead(IV) oxalate
63. cobalt(III) fluoride
64. barium sulphite
65. copper(II) dichromate
66. nitrogen triiodide
67. chromium(II) bromide
68. magnesium phosphide
69. iron(II) sulphate pentahydrate
70. calcium hydroxide
71. phosphoric acid
72. radium sulphate
73. potassium hydrogen oxalate
74. dichlorine monoxide
75. titanium(IV) oxide
76. nickel(II) sulphate heptahydrate
77. magnesium chlorite
78. lead(IV) chloride
79. iron(III) hydrogen oxalate
80. diiodine pentoxide
81. mercury(II) nitrate
82. zinc hydroxide
83. ~~hydrogen sulphide~~ → hydrosulphuric acid / dihydrogen sulphide
84. xenon trioxide
85. titanium(II) chloride
86. hydrofluoric acid
87. tin(IV) chromate
88. cobalt(II) phosphate octahydrate
89. platinum(IV) sulphide

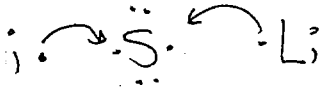
90. $AgCl$
91. SO_2
92. $Fe_2(C_2O_4)_3$
93. BeO
94. $Pb(CH_3COO)_2 \cdot 10H_2O$
95. K_2CrO_4
96. $Hg_2(CH_3COO)_2$
97. $MoCl_3$
98. NH_3
99. Au_2S_3
100. $Ag_2Cr_2O_7$
101. $Ca(CH_3COO)_2$
102. $Cr_2(C_2O_4)_3$
103. $Ca(NO_2)_2$
104. F_2O_2
105. Mo_2O_5
106. SiF_4
107. $Cd(CH_3COO)_2$
108. $HgCl_2$
109. $LiHSO_3$
110. CH_3COOH
111. $Mg(ClO_3)_2 \cdot 6H_2O$
112. PF_3
113. CuI_2
114. Ca_3N_2
115. $Mg(OH)_2$
116. $Mo_2S_5 \cdot 3H_2O$
117. $Fe(H_2PO_4)_2$
118. CI_4
119. $ZnSO_4$
120. Hg_2S
121. H_2SO_3
122. $FeF_2 \cdot 8H_2O$
123. $Mg(HSO_4)_2$
124. Al_2S_3
125. $RaCO_3$
126. XeF_4
127. Na_2O
128. $Ba_3(PO_4)_2$
129. $Hg_2(NO_3)_2 \cdot 2H_2O$
130. $NaClO$
131. $AuCN$
132. $SnBr_4$
133. HI
134. S_4N_4
135. $Fe(OH)_2$
136. CuF
137. $Sn(HCO_3)_2$
138. N_2O_5
139. $Zn(HSO_3)_2$
140. $Zn(ClO_4)_2 \cdot 6H_2O$
141. $Au(NO_3)_3$
142. $Mn_2(SO_4)_3$
143. HCl
144. CrO
145. $Zn(HS)_2$
146. MoS_3
147. $Fe_2(CO_3)_3$
148. IF_5
149. MnO_2
150. HCN
151. $Fe_2(SO_4)_3 \cdot 9H_2O$
152. KNO_2
153. CrP
154. $Ni(OH)_2$
155. ClO_4
156. $Hg(SCN)_2$
157. HNO_2
158. $PbCO_3$
159. $NaHC_2O_4$
160. $AlBr_3 \cdot 6H_2O$
161. PbI_2
162. Ag_2O
163. $Mn(HPO_4)_2$

the electron dots for the following:

Lithium & sulphur

Li_2S

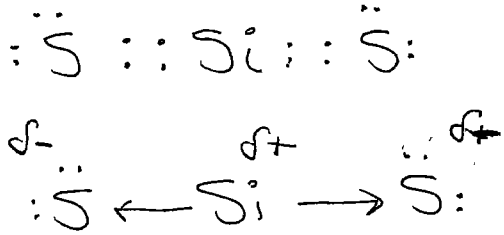




$Li_2^{+}S^{2-}$

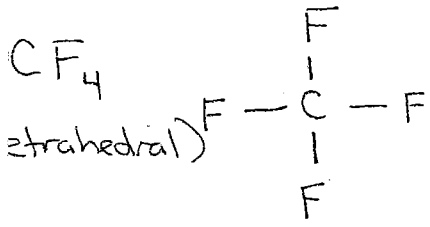
d) Silicon & sulphur

SiS_2



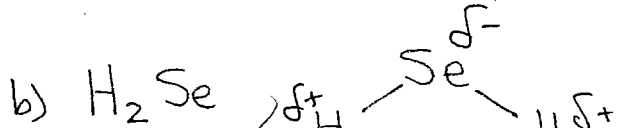
the molecules below, determine if it is polar or polar. If polar, show direction and partial charges (δ+ & δ-)

CF_4 (tetrahedral)



non-polar

b) H_2Se (bent)



polar

a) polar covalent

b) covalent

c) ionic

d) ionic

e) polar covalent

f) polar covalent