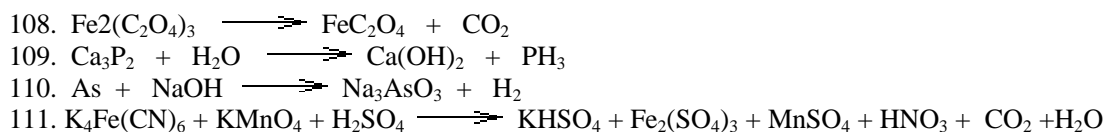


Question 1: Balance the following equations:

1. $\text{H}_2 + \text{O}_2 \longrightarrow \text{H}_2\text{O}$
2. $\text{S}_8 + \text{O}_2 \longrightarrow \text{SO}_3$
3. $\text{HgO} \longrightarrow \text{Hg} + \text{O}_2$
4. $\text{Zn} + \text{HCl} \longrightarrow \text{ZnCl}_2 + \text{H}_2$
5. $\text{Na} + \text{H}_2\text{O} \longrightarrow \text{NaOH} + \text{H}_2$
6. $\text{C}_{10}\text{H}_{16} + \text{Cl}_2 \longrightarrow \text{C} + \text{HCl}$
7. $\text{Si}_2\text{H}_3 + \text{O}_2 \longrightarrow \text{SiO}_2 + \text{H}_2\text{O}$
8. $\text{Fe} + \text{O}_2 \longrightarrow \text{Fe}_2\text{O}_3$
9. $\text{C}_7\text{H}_6\text{O}_2 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
10. $\text{FeS}_2 + \text{O}_2 \longrightarrow \text{Fe}_2\text{O}_3 + \text{SO}_2$
11. $\text{Fe}_2\text{O}_3 + \text{H}_2 \longrightarrow \text{Fe} + \text{H}_2\text{O}$
12. $\text{K} + \text{Br}_2 \longrightarrow \text{KBr}$
13. $\text{C}_2\text{H}_2 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
14. $\text{H}_2\text{O}_2 \longrightarrow \text{H}_2\text{O} + \text{O}_2$
15. $\text{C}_7\text{H}_{16} + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
16. $\text{SiO}_2 + \text{HF} \longrightarrow \text{SiF}_4 + \text{H}_2\text{O}$
17. $\text{KClO}_3 \longrightarrow \text{KCl} + \text{O}_2$
18. $\text{KClO}_3 \longrightarrow \text{KClO}_4 + \text{KCl}$
19. $\text{P}_4\text{O}_{10} + \text{H}_2\text{O} \longrightarrow \text{H}_3\text{PO}_4$
20. $\text{Sb} + \text{O}_2 \longrightarrow \text{Sb}_4\text{O}_6$
21. $\text{C}_3\text{H}_8 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
22. $\text{Fe}_2\text{O}_3 + \text{CO} \longrightarrow \text{Fe} + \text{CO}_2$
23. $\text{PCl}_5 + \text{H}_2\text{O} \longrightarrow \text{HCl} + \text{H}_3\text{PO}_4$
24. $\text{H}_2\text{S} + \text{Cl}_2 \longrightarrow \text{S}_8 + \text{HCl}$
25. $\text{Fe} + \text{H}_2\text{O} \longrightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$
26. $\text{N}_2 + \text{H}_2 \longrightarrow \text{NH}_3$
27. $\text{N}_2 + \text{O}_2 \longrightarrow \text{N}_2\text{O}$
28. $\text{CO}_2 + \text{H}_2\text{O} \longrightarrow \text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2$
29. $\text{SiCl}_4 + \text{H}_2\text{O} \longrightarrow \text{H}_4\text{SiO}_4 + \text{HCl}$
30. $\text{H}_3\text{PO}_4 \longrightarrow \text{H}_4\text{P}_2\text{O}_7 + \text{H}_2\text{O}$
31. $\text{CO}_2 + \text{NH}_3 \longrightarrow \text{OC}(\text{NH}_2)_2 + \text{H}_2\text{O}$
32. $\text{Al}(\text{OH})_3 + \text{H}_2\text{SO}_4 \longrightarrow \text{Al}_2(\text{SO}_4)_3 + \text{H}_2\text{O}$
33. $\text{Fe}_2(\text{SO}_4)_3 + \text{KOH} \longrightarrow \text{K}_2\text{SO}_4 + \text{Fe}(\text{OH})_3$
34. $\text{H}_2\text{SO}_4 + \text{HI} \longrightarrow \text{H}_2\text{S} + \text{I}_2 + \text{H}_2\text{O}$
35. $\text{Al} + \text{FeO} \longrightarrow \text{Al}_2\text{O}_3 + \text{Fe}$
36. $\text{Na}_2\text{CO}_3 + \text{HCl} \longrightarrow \text{NaCl} + \text{H}_2\text{O} + \text{CO}_2$
37. $\text{P}_4 + \text{O}_2 \longrightarrow \text{P}_2\text{O}_5$
38. $\text{K}_2\text{O} + \text{H}_2\text{O} \longrightarrow \text{KOH}$
39. $\text{Al} + \text{O}_2 \longrightarrow \text{Al}_2\text{O}_3$
40. $\text{Na}_2\text{O}_2 + \text{H}_2\text{O} \longrightarrow \text{NaOH} + \text{O}_2$
41. $\text{C} + \text{H}_2\text{O} \longrightarrow \text{CO} + \text{H}_2$
42. $\text{H}_3\text{AsO}_4 \longrightarrow \text{As}_2\text{O}_5 + \text{H}_2\text{O}$
43. $\text{Al}_2(\text{SO}_4)_3 + \text{Ca}(\text{OH})_2 \longrightarrow \text{Al}(\text{OH})_3 + \text{CaSO}_4$
44. $\text{FeCl}_3 + \text{NH}_4\text{OH} \longrightarrow \text{Fe}(\text{OH})_3 + \text{NH}_4\text{Cl}$
45. $\text{Ca}_3(\text{PO}_4)_2 + 6 \text{SiO}_2 \longrightarrow \text{P}_4\text{O}_{10} + \text{CaSiO}_3$
46. $\text{N}_2\text{O}_5 + \text{H}_2\text{O} \longrightarrow \text{HNO}_3$
47. $\text{Al} + \text{HCl} \longrightarrow \text{AlCl}_3 + \text{H}_2$
48. $\text{H}_3\text{BO}_3 \longrightarrow \text{H}_4\text{B}_6\text{O}_{11} + \text{H}_2\text{O}$
49. $\text{Mg} + \text{N}_2 \longrightarrow \text{Mg}_3\text{N}_2$
50. $\text{NaOH} + \text{Cl}_2 \longrightarrow \text{NaCl} +$
51. $\text{Li}_2\text{O} + \text{H}_2\text{O} \longrightarrow \text{LiOH}$
52. $\text{CaC}_2 + \text{H}_2\text{O} \longrightarrow \text{C}_2\text{H}_2 + \text{Ca}(\text{OH})_2$
53. $\text{Fe}(\text{OH})_3 \longrightarrow \text{Fe}_2\text{O}_3 + \text{H}_2\text{O}$

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54. $\text{Pb}(\text{NO}_3)_2 \longrightarrow \text{PbO} + \text{NO}_2 + \text{O}_2$
55. $\text{BaO} + \text{H}_2\text{O} \longrightarrow \text{Ba}(\text{OH})_2$
56. $\text{Ca} + \text{AlCl}_3 \longrightarrow \text{CaCl}_2 + \text{Al}$
57. $\text{NH}_3 + \text{NO} \longrightarrow \text{N}_2 + \text{H}_2\text{O}$
58. $\text{H}_3\text{PO}_3 \longrightarrow \text{H}_3\text{PO}_4 + \text{PH}_3$
59. $\text{Fe}_2\text{O}_3 + \text{C} \longrightarrow \text{CO} + \text{Fe}$
60. $\text{FeS} + \text{O}_2 \longrightarrow \text{Fe}_2\text{O}_3 + \text{SO}_2$
61. $\text{NH}_3 + \text{O}_2 \longrightarrow \text{NO} + \text{H}_2\text{O}$
62. $\text{Si} + \text{S}_8 \longrightarrow \text{Si}_2\text{S}_4$
63. $\text{Hg}_2\text{CO}_3 \longrightarrow \text{Hg} + \text{HgO} + \text{CO}_2$
64. $\text{SiC} + \text{Cl}_2 \longrightarrow \text{SiCl}_4 + \text{C}$
65. $\text{Al}_4\text{C}_3 + \text{H}_2\text{O} \longrightarrow \text{CH}_4 + \text{Al}(\text{OH})_3$
66. $\text{V}_2\text{O}_5 + \text{HCl} \longrightarrow \text{VOCl}_3 + \text{H}_2\text{O}$
67. $\text{Ag}_2\text{S} + \text{KCN} \longrightarrow \text{KAg}(\text{CN})_2 + \text{K}_2\text{S}$
68. $\text{Au}_2\text{S}_3 + \text{H}_2 \longrightarrow \text{Au} + \text{H}_2\text{S}$
69. $\text{ClO}_2 + \text{H}_2\text{O} \longrightarrow \text{HClO}_2 + \text{HClO}_3$
70. $\text{KO}_2 + \text{CO}_2 \longrightarrow \text{K}_2\text{CO}_3 + \text{O}_2$
71. $\text{MgNH}_4\text{PO}_4 \longrightarrow \text{Mg}_2\text{P}_2\text{O}_7 + \text{NH}_3 + \text{H}_2\text{O}$
72. $\text{MnO}_2 + \text{HCl} \longrightarrow \text{MnCl}_2 + \text{H}_2\text{O} + \text{Cl}_2$
73. $\text{Pb} + \text{Na} + \text{C}_2\text{H}_5\text{Cl} \longrightarrow \text{Pb}(\text{C}_2\text{H}_5)_4 + \text{NaCl}$
74. $\text{Ca}(\text{OH})_2 + \text{H}_3\text{PO}_4 \longrightarrow \text{CaHPO}_4 + \text{H}_2\text{O}$
75. $\text{Zn} + \text{NaOH} + \text{H}_2\text{O} \longrightarrow \text{Na}_2\text{Zn}(\text{OH})_4 + \text{H}_2$
76. $\text{SrBr}_2 + (\text{NH}_4)_2\text{CO}_3 \longrightarrow \text{SrCO}_3 + \text{NH}_4\text{Br}$
77. $\text{Hg}(\text{OH})_2 + \text{H}_3\text{PO}_4 \longrightarrow \text{Hg}_3(\text{PO}_4)_2 + \text{H}_2\text{O}$
78. $\text{Ca}_3(\text{PO}_4)_2 + \text{SiO}_2 + \text{C} \longrightarrow \text{CaSiO}_3 + \text{P}_4 + \text{CO}$
79. $\text{I}_4\text{O}_9 \longrightarrow \text{I}_2\text{O}_6 + \text{I}_2 + \text{O}_2$
(this equation can be balanced with various sets of coefficients)
80. $\text{C}_2\text{H}_3\text{Cl} + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O} + \text{HCl}$
81. $(\text{NH}_4)_2\text{Cr}_2\text{O}_7 \longrightarrow \text{NH}_3 + \text{H}_2\text{O} + \text{Cr}_2\text{O}_3 + \text{O}_2$
82. $\text{Al} + \text{NaOH} + \text{H}_2\text{O} \longrightarrow \text{NaAl}(\text{OH})_4 + \text{H}_2$
83. $\text{NH}_4\text{Cl} + \text{Ca}(\text{OH})_2 \longrightarrow \text{CaCl}_2 + \text{NH}_3 + \text{H}_2\text{O}$
84. $\text{Al} + \text{NH}_4\text{ClO}_4 \longrightarrow \text{Al}_2\text{O}_3 + \text{AlCl}_3 + \text{NO} + \text{H}_2\text{O}$
85. $\text{H}_2\text{SO}_4 + \text{NaHCO}_3 \longrightarrow \text{Na}_2\text{SO}_4 + \text{CO}_2 + \text{H}_2\text{O}$
86. $\text{Ca}_{10}\text{F}_2(\text{PO}_4)_6 + \text{H}_2\text{SO}_4 \longrightarrow \text{Ca}(\text{H}_2\text{PO}_4)_2 + \text{CaSO}_4 + \text{HF}$
87. $\text{Ca}_3(\text{PO}_4)_2 + \text{H}_2\text{SO}_4 \longrightarrow \text{CaSO}_4 + \text{Ca}(\text{H}_2\text{PO}_4)_2$
88. $\text{H}_3\text{PO}_4 + (\text{NH}_4)_2\text{MoO}_4 + \text{HNO}_3 \longrightarrow (\text{NH}_4)_3\text{PO}_4 \cdot 12\text{MoO}_3 + \text{NH}_4\text{NO}_3 + \text{H}_2\text{O}$
89. $\text{C}_4\text{H}_{10} + \text{Cl}_2 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{CCl}_4 + \text{H}_2\text{O}$
90. $\text{C}_7\text{H}_{10}\text{N} + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O} + \text{NO}_2$
91. $\text{H}_3\text{PO}_4 + \text{HCl} \longrightarrow \text{PCl}_5 + \text{H}_2\text{O}$
92. $\text{HCl} + \text{K}_2\text{CO}_3 \longrightarrow \text{KCl} + \text{H}_2\text{O} + \text{CO}_2$
93. $\text{Ca}(\text{ClO}_3)_2 \longrightarrow \text{CaCl}_2 + \text{O}_2$
94. $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \longrightarrow \text{CO} + \text{H}_2\text{O}$
95. $\text{Xe} + \text{F}_2 \longrightarrow \text{XeF}_6$
96. $\text{NH}_4\text{NO}_3 \longrightarrow \text{N}_2\text{O} + \text{H}_2\text{O}$
97. $\text{Au}_2\text{O}_3 \longrightarrow \text{Au} + \text{O}_2$
98. $\text{C}_4\text{H}_{10} + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
99. $\text{Fe}_3\text{O}_4 + \text{H}_2 \longrightarrow \text{Fe} + \text{H}_2\text{O}$
100. $\text{O}_2 \longrightarrow \text{O}_3$
101. $\text{I}_2 + \text{HNO}_3 \longrightarrow \text{HIO}_3 + \text{NO}_2 + \text{H}_2$
102. $\text{C}_6\text{H}_6 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
103. $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
104. $\text{HClO}_4 + \text{P}_4\text{O}_{10} \longrightarrow \text{H}_3\text{PO}_4 + \text{Cl}_2\text{O}_7$
105. $\text{BaCl}_2 + \text{Al}_2(\text{SO}_4)_3 \longrightarrow \text{BaSO}_4 + \text{AlCl}_3$
106. $(\text{NH}_4)_2\text{Cr}_2\text{O}_7 \longrightarrow \text{Cr}_2\text{O}_3 + \text{N}_2 + \text{H}_2\text{O}$
107. $\text{NaHCO}_3 \longrightarrow \text{Na}_2\text{CO}_3 + \text{CO}_2 + \text{H}_2\text{O}$



Question 2: give the formula of the following compound without using the help of the book

- | | |
|----------------------------------|---------------------------|
| (1) sodium nitrite | (16) magnesium oxide |
| (2) copper (II)oxide | (17) potassium sulphate |
| (3) sodium iodide | (18) magnesium nitride |
| (4) sulfur dioxide | (19) sodium nitrate |
| (5) hydrogen sulfide | (20) carbon tetrachloride |
| (6) magnesium phosphate | (21) potassium sulphite |
| (7) potassium hydrogen carbonate | (22) calcium chloride |
| (8) iron(III) chloride | (23) sodium sulphide |
| (9) sulphur trioxide | (24) sodium iodate |
| (10) iron(II) sulphide | (25) iron (III) oxide |
| (11) magnesium hydroxide | (26) magnesium nitrate |
| (12) sodium bisulphate | (27) sodium sulphate |
| (13) potassium carbonate | (28) ammonium hydroxide |
| (14) carbon monoxide | (29) iron(II) sulphate |
| (15) magnesium hydride | (30) carbon dioxide |

Question 3: name the following chemical

FeS	MgO	K_2S_4
CaCl_2	NH_4OH	$\text{Mg}(\text{NO}_3)_2$
CO_2	NaNO_3	$\text{Mg}_3(\text{PO}_4)_2$
Na_2SO_4	NaIO_3	$\text{Mg}(\text{OH})_2$
FeCl_3	CO	NaHSO_4
NaI	KHCO_3	Fe_2O_3
CuO	FeSO_4	Mg_3N_2
K_2S_3	NaNO_2	SO_3
Na_2S	CCl_4	K_2CO_3
MgH_2	SO_2	H_2S