

PRACTICE QUESTIONS:
FORMULAS FOR IONIC COMPOUNDS

Key

A). METALS + NONMETALS

WRITE THE FORMULA.....

WRITE THE NAME.....

1. potassium chloride KCl
2. calcium fluoride CaF₂
3. potassium oxide K₂O
4. sodium nitride Na₃N
5. aluminum phosphide AlP
6. aluminum oxide Al₂O₃
7. barium chloride BaCl₂
8. magnesium sulphide MgS
9. beryllium oxide BeO
10. calcium nitride Ca₃N₂

1. KBr potassium bromide
2. AlF₃ aluminum fluoride
3. AlN aluminum nitride
4. Na₂O sodium oxide
5. MgO magnesium oxide
6. LiCl lithium chloride
7. CaF₂ calcium fluoride
8. MgI₂ magnesium iodide
9. K₂S potassium sulphide
10. K₃N potassium nitride

B). METALS + POLYATOMIC IONS

WRITE THE FORMULA.....

WRITE THE NAME.....

1. potassium hydroxide KOH
2. calcium bicarbonate Ca(HCO₃)₂
3. potassium sulphate K₂SO₄
4. sodium phosphate Na₃PO₄
5. aluminum carbonate Al₂(CO₃)₃
6. aluminum sulphate Al₂(SO₄)₃
7. lithium nitrate LiNO₃
8. magnesium sulphite MgSO₃
9. aluminum nitrate Al(NO₃)₃
10. ammonium chloride NH₄Cl

1. NaNO₃ Sodium nitrate
2. Al(NO₃)₃ aluminium nitrate
3. Al₂(CO₃)₃ aluminium carbonate
4. CaCO₃ calcium carbonate
5. MgSO₄ magnesium sulphate
6. Li₂CO₃ lithium carbonate
7. CaSO₄ calcium sulphate
8. Mg₃(PO₄)₂ magnesium phosphate
9. K₂SO₃ potassium sulphite
10. Ba(OH)₂ barium hydroxide

C). METALS WITH MORE THAN ONE COMBINING CAPACITY

WRITE THE FORMULA.....

WRITE THE NAME.....

1. copper (I) chloride CuCl
2. copper (II) oxide CuO
3. iron (III) sulphide Fe₂S₃
4. copper (I) carbonate Cu₂CO₃
5. gold (I) sulphate Au₂SO₄
6. mercury (II) chlorate Hg(ClO₃)₂
7. iron (II) oxide FeO
8. lead (IV) carbonate Pb(CO₃)₂
9. chromium (II) nitrate Cr(NO₃)₂
10. iron (III) phosphate FePO₄

1. CuF₂ copper (II) fluoride
2. PbS lead (II) sulphide
3. CuCO₃ copper (II) carbonate
4. HgCO₃ mercury (II) carbonate
5. AuCl₃ gold (III) chloride
6. Cr₂S₃ chromium (III) sulphide
7. FeSO₄ iron (II) sulphate
8. Sn(OH)₂ tin (II) hydroxide
9. Hg₂O mercury (I) oxide
10. Fe₃(PO₄)₂ iron (II) phosphate

Binary Ionics (Simple)

Name: Key

FORMULA #1

A. Name the following compounds

1. CaCl_2 calcium chloride
2. AgCl silver chloride
3. MgO magnesium oxide
4. NaBr sodium bromide
5. Al_2O_3 aluminum oxide
6. KI potassium iodide
7. ZnCl_2 zinc chloride
8. Li_2O lithium oxide
9. BaO barium oxide
10. CaBr_2 calcium bromide
11. MgCl_2 magnesium chloride
12. AgI silver iodide
13. ZnS zinc sulfide
14. BaF_2 barium fluoride
15. Ca_3P_2 calcium phosphide
16. Na_2O sodium oxide
17. AlN aluminum nitride
- ~~18. NiBr_2 nickel bromide~~
19. CaC_2 calcium carbide
20. K_2O potassium oxide
21. H_2S hydrogen sulfide
22. Na_3N sodium nitride
23. LiF lithium fluoride
24. AlCl_3 aluminum chloride
- ~~25. NiO nickel oxide~~

B. Write the formulae for the following compounds

1. sodium chloride NaCl
2. potassium bromide KBr
3. calcium iodide CaI_2
4. zinc oxide ZnO
5. silver sulphide Ag_2S
6. potassium sulphide K_2S
7. barium hydride BaH_2
8. silver oxide Ag_2O
9. lithium chloride LiCl
10. hydrogen bromide HBr
11. ~~nickel chloride~~
12. lithium nitride Li_3N
13. zinc bromide ZnBr_2
14. sodium iodide NaI
15. barium chloride BaCl_2
16. potassium hydride KH
17. aluminum sulphide Al_2S_3
18. calcium silicide Ca_2Si
19. calcium sulphide CaS
20. magnesium phosphide Mg_3P_2
21. barium carbide Ba_2C
22. sodium hydride NaH
23. magnesium fluoride MgF_2
24. zinc nitride Zn_3N_2
25. aluminum carbide Al_4C_3

FORMULA #2

Key

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A. Name the following compounds

1. CaCO_3 calcium carbonate
2. NH_4NO_3 ammonium nitrate
3. ZnSO_4 zinc sulfate
4. KNO_3 potassium nitrate
5. Mg(OH)_2 magnesium hydroxide
6. LiHCO_3 lithium bicarbonate
7. BaSO_4 barium sulphate
8. $\text{Al(ClO}_4)_3$ aluminum perchlorate
9. Ni(OH)_2 nickel (II) hydroxide
10. KClO_3 potassium chlorate
11. NaHCO_3 sodium bicarbonate
12. ZnCrO_4 zinc chromate
13. MgSiO_3 magnesium silicate
14. BaCO_3 barium carbonate
15. KMnO_4 potassium permanganate
16. AgNO_3 silver nitrate
17. Al(OH)_3 aluminum hydroxide
18. $\text{Ni(C}_2\text{H}_3\text{O}_2)_2$ nickel (II) acetate
19. $\text{Na}_2\text{Cr}_2\text{O}_7$ sodium dichromate
20. $(\text{NH}_4)_3\text{PO}_4$ ammonium phosphate
21. Na_2SO_3 sodium sulphite
22. Ag_2SO_4 silver sulphate
23. KHS potassium bisulphide
24. NH_4HSO_4 ammonium bisulphate
25. $\text{Zn(C}_2\text{H}_3\text{O}_2)_2$ zinc acetate

B: Write the formulae for the following compounds

1. zinc carbonate ZnCO_3
2. lithium carbonate Li_2CO_3
3. zinc nitrate $\text{Zn(NO}_3)_2$
4. sodium permanganate NaMnO_4
5. calcium hypochlorite Ca(ClO)_2
6. lithium silicate Li_2SiO_3
7. magnesium acetate $\text{Mg(C}_2\text{H}_3\text{O}_2)_2$
8. ammonium carbonate $(\text{NH}_4)_2\text{CO}_3$
9. sodium nitrite NaNO_2
10. potassium carbonate K_2CO_3
11. nickel(III) perchlorate $\text{Ni(ClO}_4)_3$
12. barium sulphate BaSO_4
13. magnesium chlorate $\text{Mg(ClO}_3)_2$
14. sodium bisulphite NaHSO_3
15. aluminum chlorate $\text{Al(ClO}_3)_3$
16. lithium hydroxide LiOH
17. silver sulphite Ag_2SO_3
18. potassium silicate K_2SiO_3
19. nickel(II) carbonate NiCO_3
20. barium dichromate BaCr_2O_7
21. ammonium sulphite $(\text{NH}_4)_2\text{SO}_3$
22. calcium hydroxide Ca(OH)_2
23. silver chromate Ag_2CrO_4
24. aluminum sulphate $\text{Al}_2(\text{SO}_4)_3$
25. zinc phosphate $\text{Zn}_3(\text{PO}_4)_2$

Multivalent Metals.

Date: _____

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FORMULA #3

A. Name the following compounds

B. Write the formulae for the following compounds

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| 1. CuCl | <u>copper(I) chloride</u> | 1. cobalt (II) chloride | <u>CoCl₂</u> |
| 2. FeO | <u>iron(II) oxide</u> | 2. chromium (II) oxide | <u>CrO</u> |
| 3. HgBr ₂ | <u>mercury(II) bromide</u> | 3. gold (I) chloride | <u>AuCl</u> |
| 4. PbO ₂ | <u>lead(IV) oxide</u> | 4. lead (II) fluoride | <u>PbF₂</u> |
| 5. CrS | <u>chromium(II) sulphide</u> | 5. copper (I) nitride | <u>Cu₃N</u> |
| 6. FeCl ₃ | <u>iron(III) chloride</u> | 6. tin (IV) sulphide | <u>SnS₂</u> |
| 7. AuI | <u>gold(I) iodide</u> | 7. copper (II) sulphide | <u>CuS</u> |
| 8. Cu ₂ O | <u>copper(I) oxide</u> | 8. manganese (III) oxide | <u>Mn₂O₃</u> |
| 9. PbS | <u>lead(II) sulphide</u> | 9. gold (III) sulphide | <u>Au₂S₃</u> |
| 10. Hg ₂ O | <u>mercury(I) oxide</u> | 10. iron (III) sulphide | <u>Fe₂S₃</u> |
| 11. SnF ₂ | <u>tin(II) fluoride</u> | 11. cobalt (III) oxide | <u>Co₂O₃</u> |
| 12. AuBr ₃ | <u>gold(III) bromide</u> | 12. manganese (III) nitride | <u>MnN</u> |
| 13. CrF ₂ | <u>chromium(II) fluoride</u> | 13. mercury (II) chlorate | <u>Hg(ClO₃)₂</u> |
| 14. MnS | <u>manganese(II) sulphide</u> | 14. lead (II) dichromate | <u>PbCr₂O₇</u> |
| 15. SnH ₄ | <u>tin(IV) hydride</u> | 15. chromium (III) nitrate | <u>Cr(NO₃)₃</u> |
| 16. Fe ₂ O ₃ | <u>iron(III) oxide</u> | 16. manganese (III) phosphate | <u>MnPO₄</u> |
| 17. CuCO ₃ | <u>copper(II) carbonate</u> | 17. tin (II) sulphate | <u>SnSO₄</u> |
| 18. PbSO ₃ | <u>lead(II) sulphite</u> | 18. copper (II) dichromate | <u>CaCr₂O₇</u> |
| 19. Fe(NO ₃) ₃ | <u>iron(III) nitrate</u> | 19. cobalt (II) perchlorate | <u>Co(ClO₄)₂</u> |
| 20. Sn(C ₂ H ₃ O ₂) ₂ | <u>tin(II) acetate</u> | 20. iron (II) acetate | <u>Fe(C₂H₃O₂)₂</u> |
| 21. Cu ₂ SO ₄ | <u>copper(I) sulphate</u> | 21. chromium (II) sulphate | <u>CrSO₄</u> |
| 22. HgCrO ₄ | <u>mercury(II) chromate</u> | 22. manganese (II) carbonate | <u>MnCO₃</u> |
| 23. Pb(NO ₃) ₂ | <u>lead(II) nitrate</u> | 23. copper (II) hydroxide | <u>Cu(OH)₂</u> |
| 24. Co(OH) ₃ | <u>cobalt(III) hydroxide</u> | 24. tin (IV) nitrate | <u>Sn(NO₃)₄</u> |
| 25. Sn(SO ₄) ₂ | <u>tin(IV) sulphate</u> | 25. chromium (III) acetate | <u>Cr(C₂H₃O₂)₃</u> |