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G11 Chemistry: Class 4 Homework

MULTIPLE CHOICE: Circle the correct answer. [10 marks]

 Given that the ion ClO₃ is named chlorate, what is the ion ClO₄ named? A) chloride B) chlorite C) hypochlorite D) perchlorite E) perchlorate
2. What is the formula for the ionic compound formed by calcium ions and nitrate ions? A) Ca_3N_2 B) $Ca(NO_3)_2$ C) Ca_2NO_3 D) Ca_2NO_2 E) $CaNO_3$
 3. What is the formula for the ionic compound formed by calcium and selenium? A) CaSe B) Ca₂Se C) CaSe₂ D) Ca₃Se E) CaSe₃
4. What is the formula for the ionic compound formed by magnesium and iodine? A) MgI B) Mg ₂ I C) MgI ₂ D) MgI ₃ E) Mg ₃ I
5. Predict the formula for the binary compound formed between barium and phosphorus. A) BaP B) Ba $_2$ P C) BaP $_2$ D) Ba $_2$ P $_3$ E) Ba $_3$ P $_2$

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- 6. Which is the correct formula for copper(II) phosphate?
- A) Cu₂PO₄
- B) $Cu_3(PO_4)_2$
- C) Cu₂PO₃
- D) $Cu(PO_4)_2$
- E) $Cu(PO_3)_2$
- 7. The chemical name for ClO₃⁻ is chlorate ion. Therefore, the name of HClO₃ is
- A) hydrochloric acid
- B) chloroform
- C) hydrogen trioxychloride
- D) chlorous acid
- E) chloric acid
- 8. The formula for magnesium sulfate is
- A) MnS
- B) MgS
- C) MnSO₃
- D) MgSO₄
- 9. The correct name for NH₄NO₃ is
- A) ammonium nitrate.
- B) ammonium nitrogen trioxide.
- C) ammonia nitrogen oxide.
- D) hydrogen nitrogen oxide.
- E) hydrogen nitrate.
- 10. Give the formula for cobalt(II) chlorate dihydrate.
- A) CoCl₂·2H₂O
- B) $CoClO_3(H_2O)_2$
- C) $Co(CIO_3)_2(H_2O)_2$
- D) $Co(CIO_3)_2 \cdot 2H_2O$
- E) $Co_2(CIO_3)_3 \cdot 2H_2O$

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1. Complete the following: [26 marks]

Chemical Name	Chemical Formula
Sodium hydrogen carbonate	
Potassium hypochlorite	
Sodium thiosulfate	
Sodium cyanate	
Tin (II) fluoride	
Zinc nitrate hexahydrate	
Nitrogen trichloride	
Sodium periodate	
Manganese (II) iodide	
Barium sulfate	
Magnesium carbonate pentahydrate	
Sodium hypochlorite	
Calcium phosphate	
	KClO ₄
	Al(NO ₂) ₃
	Ni(OH) ₂
	Ag_3PO_4
	N_2O_5
	CF ₄
	NiCl ₂
	Fe(IO ₄) ₃
	HIO_2
	FeO
	NaHSO ₄
	$K_2Cr_2O_7$
	PCl ₅

2. Balance the following chemical equations. [20 marks]

b)
$$___H_2O(1) \rightarrow ___H_2(g) + ___O_2(g)$$

c) ____ Fe(s) + ___
$$H_2O(g) \rightarrow$$
___ $H_2(g) +$ ___ $Fe_3O_4(s)$

d) ____ AsCl₃ (aq) + ___ H₂S (aq)
$$\rightarrow$$
 ___ As₂S₃ (s) + ___ HCl (aq)

e) ____ CuSO₄ • 5 H₂O (s)
$$\rightarrow$$
 ____ CuSO₄ (s) + ____ H₂O (g)

f) ____ Fe₂O₃ (s) + ___ H₂ (g)
$$\rightarrow$$
 ___ Fe(s) + ___ H₂O(l)

g) ____ CaCO₃ (s)
$$\rightarrow$$
 ____ CaO (s) + ___ CO₂ (g)

h) _____ Fe(s) + _____
$$S_8(s) \rightarrow$$
 _____ FeS(s)

i) _____
$$H_2S$$
 (aq) + ____ KOH (aq) \rightarrow _____ H_2O (1) + ____ K_2S (aq)

j) ____ NaCl (1)
$$\rightarrow$$
 ____ Na (1) + ___ Cl₂ (g)

k) ____ Al (s) + ____
$$H_2SO_4$$
 (aq) \rightarrow ____ H_2 (g) + ____ $Al_2(SO_4)_3$ (aq)

1)
$$\underline{\hspace{1cm}} H_3PO_4(aq) + \underline{\hspace{1cm}} NH_4OH(aq) \rightarrow \underline{\hspace{1cm}} H_2O(1) + \underline{\hspace{1cm}} (NH_4)_3PO_4(aq)$$

m) ____
$$C_3H_8(g) + ___ O_2(g) \rightarrow ___ CO_2(g) + ___ H_2O(l)$$

n) ____ Al
$$_{(S)}$$
 + ____ O_{2} $_{(g)}$ \rightarrow ____ Al $_{2}O_{3}$ $_{(S)}$

o) ____CH₄(g)+___O₂(g)
$$\rightarrow$$
___CO₂(g)+___H₂O(l)

p) ____
$$K_2SO_4(aq) +$$
___ $BaCl_2(aq) \rightarrow$ ___ $KCl(aq) +$ __ $BaSO_4(s)$

q) ____
$$C_5H_{12}(1) + ___ O_2(g) \rightarrow ___ CO_2(g) + ___ H_2O(g)$$

r) ____ Ca(OH),
$$(aq) +$$
___ NH₄Cl $(aq) \rightarrow$ ___ NH₄OH $(aq) +$ __ CaCl, (aq)

s) ____
$$V_2O_5(s) +$$
 ____ $Ca(s) \rightarrow$ ____ $CaO(s) +$ ____ $V(s)$

t) _____ Na (s) + ____ ZnI₂ (aq)
$$\rightarrow$$
 _____ NaI (aq) + ____ Zn (s)