

?Q1: Which of the following is a strong electrolyte in aqueous solution

- A. HF
- B.  $\text{NH}_3$
- C.  $\text{CH}_3\text{COOH}$
- D.  $\text{H}_2\text{O}$
- E.  $\text{AgNO}_3$

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?Q2: Which of the following ions is correctly paired with its name using the Stock system

- A.  $\text{Fe}^{2+} \rightarrow$  iron(III) ion
- B.  $\text{Cu}^+ \rightarrow$  copper(II) ion
- C.  $\text{Sn}^{4+} \rightarrow$  tin(IV) ion
- D.  $\text{Pb}^{2+} \rightarrow$  lead(IV) ion
- E.  $\text{Fe}^{3+} \rightarrow$  iron(II) ion

?Q3: What is the correct formula of chromium(III) oxide

- A.  $\text{Cr}_2\text{O}_3$
- B.  $\text{CrO}_2$
- C.  $\text{CrO}_3$
- D.  $\text{Cr}_3\text{O}_2$
- E.  $\text{Cr}_2\text{O}_4$

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:Q4: The molar mass of calcium nitrate,  $\text{Ca}(\text{NO}_3)_2$ , is approximately

- A. 62 g/mol
- B. 102 g/mol
- C. 164 g/mol
- D. 238 g/mol
- E. 310 g/mol

?Q5: How many molecules are in 0.25 mol of  $\text{CO}_2$

- A.  $1.2 \times 10^{23}$
- B.  $6.0 \times 10^{23}$
- C.  $3.0 \times 10^{23}$
- D.  $1.5 \times 10^{23}$
- E.  $4.5 \times 10^{23}$

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?Q6: A compound contains 40.0% C, 6.7% H, and 53.3% O. What is its empirical formula

- A. CHO
- B.  $\text{CH}_2\text{O}$
- C.  $\text{C}_2\text{H}_4\text{O}_2$
- D.  $\text{C}_2\text{H}_2\text{O}$
- E.  $\text{C}_3\text{H}_6\text{O}_3$





**Q7: For the reaction:  $2\text{HCl} + \text{Zn} \rightarrow \text{ZnCl}_2 + \text{H}_2$**

?If 0.50 mol of Zn reacts with 0.60 mol of HCl, which is the limiting reactant

- A. HCl
- B. Zn
- C. Both are limiting
- D. Neither reacts
- E. Cannot be determined

**?Q8: Which net ionic equation represents the neutralization of  $\text{HNO}_2$  with  $\text{NaOH}$**

- A.  $\text{H}^+ + \text{OH}^- \rightarrow \text{H}_2\text{O}$
- B.  $\text{HNO}_2 + \text{Na}^+ \rightarrow \text{NaHNO}_2$
- C.  $\text{HNO}_2 \rightarrow \text{H}^+ + \text{NO}_2^-$
- D.  $\text{HNO}_2 + \text{OH}^- \rightarrow \text{NO}_2^- + \text{H}_2\text{O}$
- E.  $\text{Na}^+ + \text{OH}^- \rightarrow \text{NaOH}$

**?Q9: What is the oxidation number of chlorine in  $\text{ClO}_3^-$**

- A. +7
- B. +1
- C. +3
- D. -1
- E. +5

**Q10: When solutions of 0.0500 M  $\text{BaCl}_2$  and 0.0300 M  $\text{Na}_2\text{SO}_4$  are mixed in equal volumes, a**

**?precipitate forms. Which statement is correct**

- A.  $\text{Ba}^{2+}$  is the limiting ion and all  $\text{BaSO}_4$  precipitates completely
- B.  $\text{SO}_4^{2-}$  is the limiting ion and  $\text{Ba}^{2+}$  will remain in solution
- C. Both ions are present in equal stoichiometric amounts, so no precipitate forms
- D.  $\text{BaSO}_4$  is soluble, so no reaction occurs
- E. Both ions are in excess, so the solution remains electrically neutral and unchanged

Answer	Question
E	Q1
C	Q2
A	Q3
C	Q4
D	Q5
B	Q6
A	Q7
D	Q8
E	Q9
B	Q10