

Acid, Base, and Salt

1. Using the Arrhenius definition, classify the following examples as acids, bases, or salts:

① HBr _____

⑦ KCl _____

② $Mg(OH)_2$ _____

⑧ H_3PO_4 _____

③ HCl _____

⑨ HClO _____

④ KNO_2 _____

⑩ $Al(OH)_3$ _____

⑤ HI _____

⑪ $KC_2H_3O_2$ _____

⑥ $Ba(OH)_2$ _____

⑫ NaCl _____

2. Classify each of the following compounds as an acid, base, or salt. Then indicate whether each acid and base is strong or weak. Also, indicate whether the salt is acidic, basic, or neutral.

① HNO_3 _____

② NaOH _____

③ $NaNO_3$ _____

④ KOH _____

⑤ H_2S _____

⑥ $Al(NO_3)_3$ _____

⑦ H_2SO_4 _____

⑧ $CaCl_2$ _____

⑨ H_3PO_4 _____

⑩ H_2CO_3 _____

⑪ NH_4OH _____

⑫ NH_4Cl _____

⑬ $FeBr_3$ _____

⑭ HF _____

⑮ H_2Se _____

⑯ $HMnO_4$ _____

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Answers

1. Using the Arrhenius definition, classify the following examples as acids, bases, or salts:

- | | | | |
|-----------------------|------|---|------|
| ① HBr | Acid | ⑦ KCl | Salt |
| ② Mg(OH) ₂ | Base | ⑧ H ₃ PO ₄ | Acid |
| ③ HCl | Acid | ⑨ HClO | Acid |
| ④ KNO ₂ | Salt | ⑩ Al(OH) ₃ | Base |
| ⑤ HI | Acid | ⑪ KC ₂ H ₃ O ₂ | Salt |
| ⑥ Ba(OH) ₂ | Base | ⑫ NaCl | Salt |

2. Classify each of the following compounds as an acid, base, or salt. Then indicate whether each acid and base is strong or weak. Also, indicate whether the salt is acidic, basic, or neutral.

- | | | |
|-------------------------------------|------|---------|
| ① HNO ₃ | Acid | Strong |
| ② NaOH | Base | Strong |
| ③ NaNO ₃ | Salt | Neutral |
| ④ KOH | Base | Strong |
| ⑤ H ₂ S | Acid | Weak |
| ⑥ Al(NO ₃) ₃ | Salt | Neutral |
| ⑦ H ₂ SO ₄ | Acid | Strong |
| ⑧ CaCl ₂ | Salt | Neutral |
| ⑨ H ₃ PO ₄ | Acid | Weak |
| ⑩ H ₂ CO ₃ | Acid | Weak |
| ⑪ NH ₄ OH | Base | Weak |
| ⑫ NH ₄ Cl | Salt | Acidic |
| ⑬ FeBr ₃ | Salt | Acidic |
| ⑭ HF | Acid | Weak |
| ⑮ H ₂ Se | Acid | Strong |
| ⑯ HMnO ₄ | Acid | Strong |