CONCEPT: OXYACIDS

- Represent covalent compounds containing the **hydrogen ion** bonded to a polyatomic ion containing _____.

Oxyacid Formation	
H^+ + ____ ⟶ _____	H^+ + ____ ⟶ _____

EXAMPLE: Which of the following represents the possible structure of an oxyacid?

a) $NaNO_3$ b) $HCHO_2$ c) KOH d) HCN

Oxyacid Strength

- **Oxyacid Strength Rule**: If a neutral oxyacid has ____ or more O than H then the oxyacid is a _____ acid.

Oxyacid Strength		
$HClO_3$	HOCN	$HC_4H_7O_2$
____ Oxygen	____ Oxygen	____ Oxygen
− ____ Hydrogen	− ____ Hydrogen	− ____ Hydrogen

□ **EXCEPTION:** _____ and _____ since their nonhydrogen elements have _____ electronegativities.

EXAMPLE: Which of the following represents a strong oxyacid?

a) HNO_2 b) $HC_2H_3O_2$ c) HClO d) HSO_4^- e) $HBrO_3$

Comparing Oxyacid Strength

- When comparing the strengths of Oxyacids:

Comparing Oxyacid Strength	
Different # of Oxygens Remaining	**Same # of Oxygens Remaining**
If difference between O and H are **NOT** the **SAME:**	If difference between O and H are the **SAME:**
□ _____ Oxygens = _____ acidic	□ _____ EN of Central Element = _____ acidic
HIO vs. HIO_2	H_2SO_3 vs. H_2SeO_3

EXAMPLE: Rank the following oxyacids in terms of increasing acidity.

i. $HClO_3$ ii. $HBrO_4$ iii. $HBrO_3$ iv. $HClO_4$ v. HIO