

Practice - Ions

Part I: Classifying Ions

Label each of the following as cations (C) or anions (A).

1. F^- _____ 2. Cl^- _____ 3. B^{3+} _____ 4. Li^+ _____ 5. S^{2-} _____ 6. Mg^{2+} _____

Part II: Writing & Interpreting Ions

Write the chemical symbol with proper superscript for each of the ions described below.

7. A calcium atom with a positive 2 charge _____ 8. An iodine atom with a negative 1 charge _____
9. A nitrogen atom with a negative 3 charge _____ 10. A lead atom with a positive 4 charge _____

Part III: Predicting Ion Charge

Predict the ionic charge of the following elements based on their position in the periodic table. Place a "?" next to the ones that cannot be predicted merely by their position.

11. Magnesium 2+ 12. Bromine _____ 13. Potassium _____ 14. Aluminum _____
15. Phosphorus _____ 16. Platinum _____ 17. Selenium _____ 18. Carbon _____
19. Oxygen _____ 20. Zinc _____ 21. Titanium _____ 22. Hydrogen _____

Part IV: Monatomic vs. Polyatomic Ions

Classify the following as either a monatomic (M) ion or a polyatomic (P) ion.

23. Br^- _____ 24. Mn^{2+} _____ 25. AsO_4^{3-} _____ 26. cyanide _____ 27. chloride _____ 28. acetate _____

Part V: Oxyanions

Place an "O" next to any of the polyatomic ions below that can be classified as an oxyanion.

29. Copper(I) _____ 30. Oxalate _____ 31. Carbonate _____ 32. Cyanide _____ 33. Chromate _____

Part VI: Naming Ions

Name the following ions.

34. Li^+ Name _____ 35. Ag^+ Name _____
36. P^{3-} Name _____ 37. Hg^{2+} Name _____
38. Sn^{4+} Name _____ 39. Sr^{2+} Name _____
40. Zn^{2+} Name _____ 41. S^{2-} Name _____
42. F^- Name _____ 43. Ni^{2+} Name _____

44. Sulfur has two oxyanions, SO_4^{2-} and SO_3^{2-} . Names SO_4^{2-} SO_3^{2-}

45. If carbon had two oxyanions, CO_2^{2-} and CO_3^{2-} , what would their names be?

Names CO_2^{2-} CO_3^{2-}

46. Chlorine has four oxyanions, ClO_4^- , ClO_3^- , ClO_2^- , and ClO^-

Names ClO_4^- ClO_3^- ClO_2^- ClO^-