

Chemistry Review SNC2D – Answers

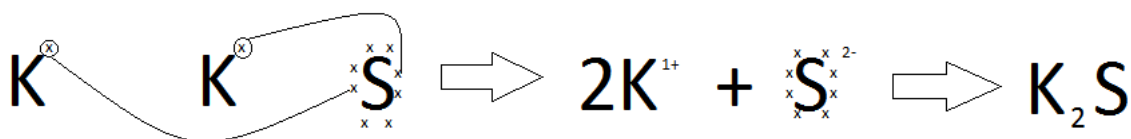
1. Physical properties: observations you make without chemically destroying the substance (i.e. colour, appearance, concentration of a substance, any measurable observation, boiling point, freezing point, etc.)

Chemical properties: properties and observations tested by reactions (i.e. how it reacts with certain substances.)

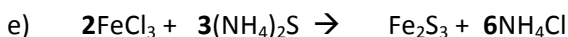
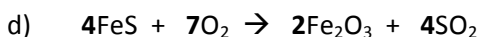
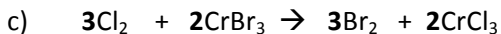
2. Ionic compounds: between non metal and a metal. Bond by transferring electrons. Generally good conductors (due to formation of ions)

Molecular compounds: between non metals. Bond by sharing electrons. Poor conductors (no ions formed)

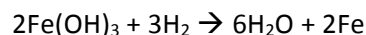
3.



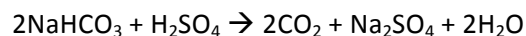
4. a) Lithium Sulfide b) Aluminum Fluoride c) Copper (II) oxide
d) Sodium Nitride e) Zinc Phosphide f) Chromium (III) phosphide
5. a) LiCl b) Fe₃P₂ c) Cu₂S
d) K₂O e) CaF₂ f) NaI
6. Clusters of atoms of non-metallic elements, often involving oxygen, that tend to stick together during chemical reactions.
7. a) K₂Cr₄ b) Sr(BrO)₂ c) (NH₄)₂CO₃
d) NiSO₄ e) BaCr₂O₇ f) NH₄BrO₄
8. Hydrogen
9. a) HNO₃ (aq) b) HIO₂ (aq) c) H₂S (aq)
d) H₂SO₃ (aq) e) H₃PO₄ (aq) f) HBr (aq)
10. a) Chromic Acid
b) Hydrofluoric Acid
c) Hypochlorous Acid
11. Hydrogen, Nitrogen, Oxygen, Fluorine, Chlorine, Bromine, Iodine
12. a) CH₄ b) NH₃
c) N₂O₄ d) CBr₄
13. a) Carbon monoxide
b) Sulfur hexachloride
c) Dinitrogen monoxide
d) Water
14. Nothing, mass is never lost nor gained in a chemical reaction. It stays the same.
15. a) FeS + 2HCl → H₂S + FeCl₂
b) 3NaOH + H₃PO₄ → Na₃PO₄ + 3H₂O



16. a) Iron (III) hydroxide + Hydrogen \rightarrow water + iron



b) Sodium hydrogen carbonate + Sulfuric acid \rightarrow Carbon dioxide + Sodium sulfate + water



17. a) $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$ (Synthesis)

b) $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$ (Decomposition)

c) $4\text{Al} + 3\text{O}_2 \rightarrow 2\text{Al}_2\text{O}_3$ (Synthesis)

18. a) $4\text{Al} + 3\text{FeO} \rightarrow 2\text{Al}_2\text{O}_3 + 3\text{Fe}$ (single displacement)

b) $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$ (double displacement)

c) $3\text{AgNO}_3 + \text{Na}_3\text{PO}_4 \rightarrow \text{Ag}_3\text{PO}_4 + 3\text{NaNO}_3$ (double displacement)

d) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$ (single displacement)

19. Acid contains hydrogen and base contains hydroxide

20. pH 4

21. pH 12

22. a) pH 3 is 1000x more acidic to pH 6

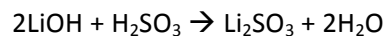
b) pH 2 is 10x less acidic to pH 1

23. a) pH 10 is 10000x less basic to a pH 14

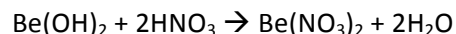
b) pH 11 is 100x more basic to a pH 9

24. Water and a salt (*remember the salt is not always sodium chloride*)

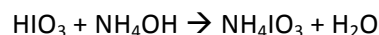
25. a) Lithium Hydroxide + Sulfurous Acid \rightarrow Lithium Sulfite + Water



b) Beryllium Hydroxide + Nitric Acid \rightarrow Beryllium Nitrate + Water



c) Iodic acid + Ammonium hydroxide \rightarrow Ammonium Iodate + Water



26. Burning coal containing sulfur (SO_2) \Rightarrow H_2SO_4 (acid)

Burning gasoline containing nitrogen \Rightarrow created nitrous oxides \Rightarrow nitric acid

27. - Pollution of lakes \Rightarrow kills aquatic plants and animals

- Pollution of oceans \Rightarrow kills shell fish with calcium carbonate

- Destruction of buildings, bridges, etc. (lots of money to fix)

- Leaching of nutrients from soil \Rightarrow not good for plants or agriculture

- Kills bacteria in soil

- Contamination of rain water \Rightarrow respiration problems in mammals