

Bauk's CHEM Ch. 8 / 18 Test Review

(Ch. 18 is for Chem 1H only.)

This is an optional assignment due the day of the test.

Materials: loose leaf paper, pen and/or pencil (You will be given a periodic table.)

Test date: _____

Test value: 200 points

Test format: (multiple choice), (short answer essays),

CHAPTER 8: constructing and balancing equations

- balance and classify reactions that are already written out in symbols and properly crisscrossed when needed, such as $H_2 + O_2 \rightarrow H_2O$
- write, balance and classify reactions written in words only, such as $hydrogen + oxygen \rightarrow water$
- complete, balance and classify reactions with no products given, such as $hydrogen + oxygen \rightarrow \underline{\hspace{2cm}}$
- net ionic equations from a double displacement reaction, such as using $HCl(aq) + AgNO_3(aq) \rightarrow HNO_3 + AgCl(s)$ to find the net ionic equation: $Ag^+(aq) + Cl^-(aq) \rightarrow AgCl(s)$

CHAPTER 18 (Chem 1H only):

- determine oxidation numbers for elements in a compound
- determine oxidation numbers for elements in a polyatomic ion
- identify which element is oxidized or reduced in an equation
- identify oxidizing and reducing agents

TOPICS TO STUDY:

- 1) Common **acids**: know the names and formulas for the six most common acids: HCl, HNO₃, H₃PO₄, H₂SO₄, H₂CO₃, and HC₂H₃O₂ or CH₃COOH
- 2) **Activity series**: What is it? How is it used?

ACTIVITY SERIES:

HIGH	→	→	→	→	decreasing activity	→	→	→	→	LOW									
(will displace others)										(will not displace)									
F ₂			Cl ₂					Br ₂		I ₂									
Li	Rb	K	Ba	Ca	Na	Mg	Al	Mn	Zn	Fe	Ni	Sn	Pb	H	Cu	Hg	Ag	Pt	Au

- 3) **Balancing equations**: How is it done? Why should all equations be balanced?
- 4) **Catalysts**: What are their characteristics? What is their function? Where is their formula written in a reaction?
- 5) **Coefficients**: What are they? What is their function in balancing equations?
- 6) **Combustion**: What is it? What gas must be present for it to occur? What are the two products of complete combustion of hydrocarbons?
- 7) **Net ionic equation**: What is it? Be able to write a net ionic equation from a regular double displacement reaction. Give one example for this review.
- 8) List the chemical formulas and charges of the **polyatomic ions**.
- 9) **Products**: Where are they found in a chemical equation?
- 10) **Reactants**: Where are they found in a chemical equation?

11) Be able to identify **reaction types**. Include an example of each for this review:

- **combination** (synthesis) $A + B \rightarrow AB$
- **decomposition** $AB \rightarrow A + B$
- **single displacement (single replacement)** $A + BC \rightarrow AC + B$
- **double displacement (double replacement)** $AB + CD \rightarrow AD + CB$
- hydrocarbon **combustion**, complete and incomplete

12) **Skeleton equation**: what is it?

13) **Spectator ions**: What are they?

14) **Symbols** used in reactions: What do these mean?: s, l, aq, Δ

Chem 1H only:

15) Know how to name **acids**. Explain two examples that are not listed in question #1.

16) **Electronegativity (EN)**: What is this? How is EN used to determine oxidation numbers of molecular cmpds?

17) **Oxidation number**: What is it? What are the rules for assigning oxidation numbers?

18) **Oxidizing agent**: What is this? Contrast with **reducing agent**. Give an example of each.

19) **Redox**: What does this mean?

20) Write an accurate applicable skeleton chemical equation and show which element is oxidized and which is reduced.

*** Note ***

There will be at least one question pertaining to material in past chapter(s) or unit(s).