

Chem / Envsty L111:
Quiz 2

Name _____


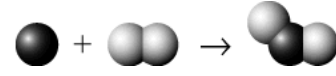
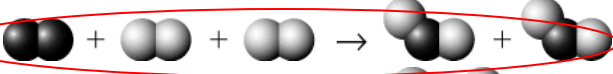
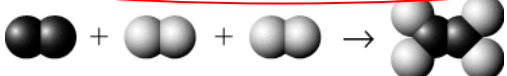
1. Which is *not* a component used to determine an individual's exposure to a pollutant? **15/24 students answered correctly**

- a. length of contact time
 - b. concentration of pollutant in the air
 - c. toxicity**
 - d. total amount (volume) of air inhaled
- Toxicity is used to determine what the appropriate limit should be, but not to measure exposure

2. In which level of the atmosphere is the air pressure greatest? **14/24**

- a. troposphere**
 - b. stratosphere
 - c. ozone
 - d. mesosphere
- The troposphere is the lowest level of the atmosphere, and thus has the highest mass of air above it pressing down

3. Which shows the balanced equation for nitrogen (●) reacting with oxygen (●) to form nitrogen dioxide? **9/24**

- a.  (b), (c) and (d) are mass balanced.
- b.  Of these, only (c) correctly
- c. ** uses N₂ and O₂ AND
- d.  produces the right product, NO₂.

4. Choose the name of the compound formed by combining potassium (K) with iodine (I) to form KI. **20/24**

- a. monopotassium iodide
 - b. iodine potassiate
 - c. potassium iodide**
 - d. potassium monoiodide
- In molecules with only 2 elements, the rule is to name the metal first and then the non-metal with the -ide ending. The mono- prefix is not needed in cases where other, similar molecules do not exist – particularly in binary molecules made of metals and non-metals

5. What is the most appropriate concentration unit used to express the concentration of a pollutant that has a concentration of 0.00004%? **19/24**

- a. pph
 - b. ppm
 - c. ppb
 - d. none of these
- Both (b) and (c) were accepted. This number is 0.4 ppm or 400 ppb. Your text would recommend 0.4 ppm, but "hundreds" of ppb is standard usage in real life.

6. Which approach would reduce indoor air pollution? **22/24**
a. air conditioning
b. sealing windows shut
c. increasing the air exchange
d. dry cleaning clothes
The easiest way to reduce indoor pollutants is to regularly exchange indoor and outdoor air – opening windows and doors, for example.
7. Same as Question 1. Note that I calculated your grades based on either 9 or 10 total questions in order to give the highest scores possible.
8. Catalytic converters reduce the amount of _____ in the car exhaust. **16/24**
a. O₃
b. CO₂
c. CO
d. SO₂
Catalytic converters are designed to undo incomplete combustion. They transform CO into CO₂, which is not toxic.
9. Green chemistry is: **24/24**
a. The evolution of green gases during a chemical reaction.
b. The chemistry associated with plants.
c. The study of green molecules and atoms.
d. The design of products and processes that reduce hazardous substances.
10. Which is the balanced chemical equation showing hydrogen peroxide (H₂O₂) decomposing into hydrogen (H₂) and oxygen (O₂)? **18/24**
a. H₂O₂ → H₂ + O₂
b. H₂ + O₂ → H₂O₂
c. 2 H₂ + O₂ → 2 H₂O₂
d. 2 H₂O₂ → 2 H₂ + O₂
Only (a) and (d) show peroxide as the reactant and H₂ and O₂ as products. Of these two, only (a) is mass-balanced.