Name_____ Date_____

Ozone—Questionnaire

Circle all correct answers (there may be more than one)

1. Ozone in our atmosphere protects us from what deadly radiation:

a. gamma rays b. x-rays c. ultraviolet light
d. radio waves e. microwaves f. infrared light

2. The layer of protective ozone is found in which part of the atmosphere?

a. troposphere b. stratosphere c. mesosphere
d. thermosphere e. exosphere f. magnetosphere

3. The harmful radiation that passes through the depleted ozone layer causes the following health problems in humans:

a. bone loss (osteoporosis) b. cataracts c. genetic mutations
d. high blood pressure e. skin cancer f. premature aging of the skin

4. Overexposure to the radiation passing through the depleted ozone layer cause health problems in the following way:

a. equally affects people at all latitudes
b. results in immediate problems
c. effects build with each overexposure
d. affects children more than adults
e. only affects people with blonde hair and blue eyes
f. cannot pass through clothing

5. Increasing radiation reaching the ground due to decreasing stratospheric ozone affects which of the following regions?

a. North Pole b. land areas in the tropics c. oceans
d. South Pole e. any area with yearlong snow cover f. deserts

6. Molecules of ozone are made up of the following atoms:

a. carbon b. hydrogen c. oxygen
d. sulfur e. nitrogen f. sodium

7. Ozone has the following characteristics:

a. odorless b. colorless c. non-reactive with other chemicals
d. long lasting e. corrosive f. cleanses the atmosphere

8. The reactions that <u>form</u> ozone can be described in the following ways:

a. only produced by components of human pollution
b. always require sun light
c. have caused a steady increase in ozone over time
d. require cold temperatures of the upper atmosphere
e. produce greater concentrations at polar latitudes than toward the equator
f. release heat to the atmosphere

9. Chemicals that destroy our protective ozone layer can be described as:
a. one molecule destroys one ozone molecule
b. acts only as a catalyst in the destruction of ozone so one molecule can destroy thousands of ozone molecules
c. only one chemical destroys ozone
d. molecules containing bromine destroy fewer ozone molecules than those containing sulfur
e. are formed only by natural processes
f. highly reactive with all chemicals in the atmosphere

10. Reactions that are depleting the ozone layer:
a. eventually produce a stable level of ozone
b. occur year round under all conditions
c. depend on the presence of sun light
d. use the same wavelength of light that produced ozone in the first place
e. never occurred before human pollution increased past a threshold
f. can be in balance immediately as soon as we stop generating the specific ozone depleting chemicals into our atmosphere

11. Restoring the ozone layer began in

a. 1960s	b. 1970s	c. 1980s
d. 1990s	e. 2000s	f. hasn't started yet

12. Plans to restore our protective ozone layer include:
a. completely banning use of all ozone depleting chemicals by 2005
b. replacing the chemicals that destroy the greatest amount of ozone first, followed by eventual ban on using all ozone depleting chemicals
c. developing technologies that will remove ozone depleting chemicals before they can begin reacting
d. gradually phasing out the use of all ozone depleting chemicals by 2020
e. destroying stockpiles of ozone depleting chemicals before they are used
f. converting ozone depleting chemicals into less harmful forms before using

13. The ozone problem can be monitored by:

a. balloons	b. rockets	c. lasers
d. aircraft	e. satellites	f. spectroscopes

14. Of the wavelengths (infrared, microwave, ultraviolet, x-ray, gamma ray, and visible) which have the following properties:
Longest wavelength? _____
Greatest energy? _____

15. How often does the global community meet to review the policies in place to replenish our ozone layer?

16. The Clean Air Act
a. was first enacted in the United States in the 1970s
b. will help replenish the ozone layer
c. focuses on effects of human-generated pollution
d. requires a comprehensive monitoring program
e. has been revised to keep up with changing technology and increasing population
f. includes developing cleaner technologies

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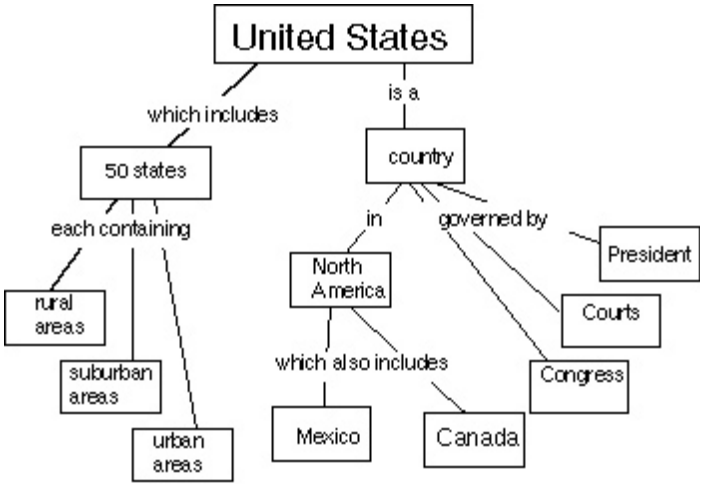
Ozone—Concept Map

A concept map is a way of displaying your knowledge about a certain subject area. It consists of a set of words in boxes representing the most important ideas. The boxes are connected by lines and words showing how the ideas in the boxes are related. For example, at right is a concept map about the United States.

Your task is to create a concept map about the role ozone plays in Earth systems. Start with the word "Sun" at the top. (If you'd like more space, you can draw your concept map on the back, or on another sheet of paper.)



Sun