

Period 16 Exercise Answers

E.1 Thermal pollution

- a) can be eliminated completely by more efficient power plants.**
- b) is not a problem in nuclear power plants.**
- c) may be associated with any heat engine.**
- d) does not significantly damage the environment.**
- e) None of the above statements is correct.**

E.1 = c

E.2 The photochemical reaction producing smog

- a) involves the release of thermal energy, causing increased thermal pollution.**
- b) involves the oxides of nitrogen, hydrocarbons, oxygen, and ozone.**
- c) is principally caused by the combustion of high sulfur content coal.**
- d) involves the absorption of infrared radiation from the sun by pollutants from gasoline engines.**
- e) Involves climatic conditions that prevent inversion layers from forming.**

E.2 = b

E.3 Which of the following produces significant amounts of pollutants in the form of oxides of sulfur?

- a) nuclear power plants
- b) automobile gasoline engines
- c) jet airplane engines
- d) coal-burning power plants
- e) backyard BBQ grills

E.3 = d

E.4 When coal with a high sulfur content is burned, SO_2 and SO_3 are produced. These products are undesirable because these gases

- a) combine in a series of reactions to form carbon dioxide, which is in part responsible for the greenhouse effect.
- b) combine with water vapor to form sulfuric acid.
- c) cause some of the sunlight to be reflected from the atmosphere and, thus, the temperature of the earth decreases.
- d) Both b) and c) above are correct.
- e) None of the answers is correct.

E.4 = b

E.5 One cause of the greenhouse effect is that carbon dioxide absorbs

- a) oxygen.
- b) x-rays.
- c) visible light.
- d) infrared radiation.
- e) nitrogen oxides.

E.5 = d

E.6 The greenhouse effect is increased by

- a) the release of oxygen by green plants.
- b) the presence of increased concentrations of nitrogen dioxide in the atmosphere from the combustion of fossil fuels.
- c) the presence of increased concentrations of carbon dioxide in the atmosphere from the combustion of fossil fuels.
- d) the presence of water vapor in the atmosphere.
- e) Both answers c) and d) are correct.

E.6 = e

Period 16 Answers

E.1 = c

E.2 = b

E.3 = d

E.4 = b

E.5 = d

E.6 = e