Period 16 Exercise Answers

4. 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.

   4 = d

5. 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 decrease of particulate matter in the atmosphere.

   5 = c
6. 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.

   $6 = c$

7. When coal with a high sulfur content is burned, $\text{SO}_2$ and $\text{SO}_3$ are produced. These products are undesirable because
   a) they combine in a series of reactions to form carbon dioxide, which is partly responsible for the greenhouse effect.
   b) they combine with water vapor to form sulfuric acid.
   c) they cause some of the sunlight to be reflected from the atmosphere and, thus, the temperature of the earth decreases.
   d) Both b) and c) are correct.

   $7 = b$
8 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

   8 = d

9 The photochemical reaction producing smog
   a) involves the release of thermal energy, causing increased thermal pollution.
   b) involves the oxides of nitrogen, hydrocarbons, 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.

   9 = b
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4 = d

5 = c

6 = c

7 = b

8 = d

9 = b