1. What was the material from which the solar system formed?
   - a. nebula made mostly of heavy elements but enriched in hydrogen and helium from supernova explosions
   - b. nebula made entirely of hydrogen and helium gas
   - c. debris from the explosion of a massive star
   - d. nebula made mostly of hydrogen and helium gas but enriched in heavier elements from supernova explosions

2. The large amount of free oxygen in Earth's present atmosphere is primarily a result of
   - a. carbon dioxide becoming dissolved in the oceans, releasing oxygen.
   - b. biological processes such as photosynthesis.
   - c. out-gassing by volcanoes and other geological processes.
   - d. splitting of carbon dioxide into carbon and oxygen by solar ultraviolet light.

3. Ozone in the stratosphere performs an important task that protects life on Earth. What is it?
   - a. Ozone absorbs much of the dangerous solar ultraviolet light.
   - b. Ozone absorbs the solar wind as it streams into Earth, thereby protecting life from dangerous ionizing radiation.
   - c. Ozone acts as a disinfectant, killing dangerous viruses and bacteria that drift in all the time from space before they can reach Earth.
   - d. Ozone absorbs infrared radiation, thereby providing a comfortable atmospheric temperature on the surface of Earth.

4. On Earth, the majority of earthquakes occur
   - a. along the zone of maximum tidal stress around the equator.
   - b. along regions of greatest thermal stress in arctic and antarctic regions.
   - c. along the boundaries of major tectonic plates.
   - d. in the centers of tectonic plates (e.g., North American continent).

5. Earth's magnetic field protects Earth and its inhabitants from
   - a. a significant proportion of the solar neutrinos, the enormous flux of which could otherwise produce damage to genetic material in life forms.
   - b. the solar wind, which would otherwise irradiate and damage life forms if not deflected.
   - c. the high-energy cosmic rays or hydrogen nuclei moving through our universe.
   - d. the majority of tiny but high-speed micrometeorites, which otherwise would crater Earth and cause significant damage to property.
6. What is the origin of the majority of lunar craters?
   - a. volcanic explosions
   - b. surface collapse after loss of groundwater by evaporation
   - c. impacts by meteoric material
   - d. impacts by space probes from Earth

7. The smooth, dark maria on the Moon are
   - a. areas that were still molten at the time of the early, heavy bombardment and therefore show no evidence of the impacts.
   - b. immense impact basins that are smooth because they were covered by lava flows after the early, heavy bombardment had ended.
   - c. immense impact basins that are smooth because earlier craters were wiped out by the impact.
   - d. regions that, although as old as the cratered highlands, escaped the early, heavy bombardment.

8. When do neap tides occur?
   - a. only when the Moon and the Sun line up on the same side of Earth
   - b. whenever Earth, the Moon, and the Sun form a straight line, regardless of which side of Earth the Moon is on
   - c. whenever the Earth-Moon line makes a 90° angle to the Earth-Sun line
   - d. only when the Moon, Earth, and the Sun form a straight line, with the Moon on the opposite side of Earth from the Sun