Home work - Ch. 7 - Earth & Terrestrial Worlds (Part 1) Student Name:

1. Which of the following layers of a planet is not characterized by its density?
   a) core
   b) mantle
   c) lithosphere
   d) crust
   e) none of the above
2. Which of the following does *not* transport heat out of a planet's interior?
   a) conduction
   b) convection
   c) differentiation
   d) radiation
3. What role does a planet's size play in its geological activity?
   a) Larger planets are more geologically active because they take longer to cool off.
   b) Larger planets are more geologically active because they have thicker lithospheres.
   c) Larger planets are less geologically active because they have thicker lithospheres.
   d) Larger planets are less geologically active because they have larger surface areas to radiate heat away.
   e) Larger planets are less geologically active because there is a greater distance between the core and the surface.
4. Which of the following is *not* a greenhouse gas?
   a) water vapor (H_2O)
   b) carbon dioxide (CO_2)
   c) ozone (O_3)
   d) methane (CH_4)
5. Why are the lunar maria smooth?
   a) They formed after the heavy bombardment and therefore have fewer craters.
   b) Bombardment of the Moon by meteoroids smoothed over any original rough features in the maria.
   c) The maria are liquid.
   d) All of the above
6. What is necessary for a *differentiation* to occur in a planet?
   a) It must have metal and rock in it
   b) It must be a mix of materials of different density
   c) Material inside must be able to flow
   d) All of the above
   e) B and C
7. What is the source of Earth's magnetic field?
   a) Magnetic rocks
   b) Magnetized iron in Earth's crust
   c) Magnetized iron in Earth's core
   d) Molten metal circulating inside of Earth, moving electrons like in a wire
8. What seems to have made the very long cliffs seen on Mercury?
   a) Volcanoes
   b) Earthquakes
   c) Cooling and shrinking when the planet became geologically dead
   d) Meteorite impacts
   e) None of the above
9. What important role plays the ozone layer in making life on Earth possible?
   a) It protects life on Earth from harmful IR and visible light.
   b) It protects life on Earth from harmful UV radiation from the sun.
   c) It is responsible for the greenhouse effects which keeps the temperature from getting too low.
   d) It plays no role.
10. What are the two major greenhouse gases in Earth's atmosphere?
   a) oxygen and carbon dioxide
   b) nitrogen and carbon dioxide
   c) hydrogen and carbon dioxide
   d) carbon dioxide and water vapor
11. If Earth did not have a magnetic field, we would never see displays of the northern lights because:
   a) We would not be here; the magnetic field made possible the evolution of human beings by preventing harmful particles from bombarding the Earth's surface.
   b) The lights are created by an overload in the number of particles normally trapped in the Earth's magnetic field.
   c) all of the above

d) none of the above

12. What theory of the Moon's origin is favored by most astronomers today?

a) The Moon formed as a separate object near Earth and at about the same time.

b) The Moon formed far from Earth and was captured by its gravity.

c) The Moon originated as material torn from the young, mostly molten Earth by centrifugal forces.

d) The Moon originated as material torn from Earth by the collision of a large Mars-sized body.