Multiple-choice questions. Mark in completely the ONE BEST answer on your answer sheet.

1. An important result of plate tectonics is that
   (a) the Earth’s core is liquid
   (b) new crust continually forms in spreading centers
   (c) the core is rich in iron
   (d) radioactive nuclei decay
   (e) impact craters are formed

2. The ages of rocks are estimated from their
   (a) iron content
   (b) density
   (c) mineral content
   (d) degree of erosion
   (e) content of radioactive atoms and their decay products

3. Which of the following are not found on the Moon?
   (a) mountains    (d) old lava flows
   (b) impact basins (e) impact craters
   (c) bodies of water

4. From study of the Moon’s surface, what have we learned about the first billion years of the solar system’s history?
   (a) large impact craters formed at a much higher rate than now
   (b) the Sun was hotter then
   (c) the solar system contained no hydrogen or helium
   (d) the planets formed at widely different times
   (e) nothing—the Moon’s surface is too young

5. The most likely explanation for most craters on the Moon is
   (a) the collapse of subsurface caverns
   (b) lava flows
   (c) volcanic cones
   (d) meteorite impacts
   (e) cracking of the lunar crust

6. Analysis of the oldest material from the Moon shows it to be
   (a) rich in precious metals
   (b) almost as old as the oldest meteorites
   (c) much younger than the Earth’s rocks
   (d) much older than meteoritic material
   (e) not radioactive at all

7. The density of Venus is most similar to that of
   (a) iron    (d) the Earth
   (b) rock    (e) the Moon
   (c) water

8. What is an important reason that Venus’ surface is very hot?
   (a) Venus is closer to the Sun than Mercury.
   (b) All sunlight reaches the surface.
   (c) Venus emits twice as much energy as it receives from the Sun, due to internal radioactivity.
   (d) Carbon dioxide in the massive atmosphere traps infrared light, warming the surface.
   (e) Actually, Venus isn’t much hotter than the Earth.

9. Environmental hazards that an astronaut would face after landing on the surface of Mercury include
   (a) the possibility of drowning in the ocean
   (b) extreme heat
   (c) extremely high atmospheric pressure
   (d) a hydrogen-rich atmosphere
   (e) very strong gravity

10. What seasonal changes are observed on Mars?
    (a) Actually, Mars doesn’t have seasons.
    (b) Every year, the river beds fill with water and then dry up.
    (c) The amount of surface covered by vegetation changes.
    (d) The amount of rainfall changes with the seasons.
    (e) The area of the polar caps changes.
11. Given that Mars' atmosphere is mostly carbon dioxide, why is there only a slight greenhouse effect?
   (a) Actually, there is a major greenhouse effect.
   (b) Since there is no vegetation, there can be no greenhouses.
   (c) Actually, Mars' atmosphere is composed mostly of nitrogen.
   (d) Most of the carbon dioxide is dissolved in the oceans.
   (e) The total amount of carbon dioxide is very small.

12. That there was formerly liquid water on the surface of Mars is shown by the existence of
   (a) volcanoes       (d) dry riverbeds
   (b) impact craters   (e) There is no such evidence.
   (c) maria

13. Which geological process apparently has never been active on Mars?
   (a) cracking of the crust
   (b) plate tectonics
   (c) volcanism
   (d) impact cratering
   (e) water erosion

14. Which solar system object is suspected to have an ocean of liquid water beneath a surface layer of ice?
   (a) Jupiter       (d) Venus
   (b) Mars          (e) Saturn
   (c) a moon of Jupiter

15. Which of the following has an atmosphere mainly composed of hydrogen?
   (a) Venus       (d) Earth
   (b) Mars        (e) Jupiter
   (c) Mercury

16. Which planet gives off more energy in the form of infrared radiation than it receives in the form of sunlight?
   (a) Mercury       (d) Mars
   (b) Venus         (e) Jupiter
   (c) the Earth

17. Saturn’s rings are composed of
   (a) thin, solid, very rigid sheets
   (b) many small objects in orbit around Saturn
   (c) clouds of gas
   (d) thick, rigid, solid sheets
   (e) liquid ethane

18. Titan is a satellite of
   (a) Earth       (d) Saturn
   (b) Mars        (e) Pluto
   (c) Jupiter

19. What evidence is there for the statement that the Earth’s core is made of iron?
   (a) The core is very dense.
   (b) The Earth exerts a gravitational attraction on every object in its vicinity.
   (c) Iron is the most abundant element in the universe.
   (d) Iron is never found in volcanoes.
   (e) Convection occurs in the mantle.

20. The Earth’s oldest rocks are found
   (a) at continental margins
   (b) in the centers of especially stable continental plates
   (c) near mid-ocean ridges
   (d) at plate boundaries
   (e) anywhere—no geographical preference