Test bank

1. The geocentric model was developed during the time of the ancient Greeks. This model _____.
   A. was abandoned during the time of the Roman Empire and would never be widely held again
   B. was held to be true by thinkers throughout the Middle Ages, up until the Renaissance
   C. was rediscovered by the Polish astronomer Copernicus and has been the accepted model of the Universe ever since
   D. has been proven by NASA space photos

2. In the heliocentric model _____.
   A. Earth orbits around the Sun
   B. the Sun orbits around Earth
   C. Earth is a stationary planet
   D. Mercury and Venus orbit around the Sun, but all other planets orbit around Earth

3. In our current understanding of the big bang, _____.
   A. Earth is much older than the rest of the Universe
   B. the Universe is considerably older than Earth
   C. Earth and the Universe formed at about the same time
   D. there is no way of knowing how old the Universe might be

4. As the Universe has evolved, _____.
   A. hydrogen has been lost through fusion to form helium within stars
   B. hydrogen concentration has increased through the fission of helium atoms
   C. hydrogen concentration has increased through the fusion of helium atoms
   D. the number of hydrogen atoms has likely remained constant

5. Among the choices below, the best estimate of the age of the Universe is _____ years old.
   A. 5 million
   B. 6 billion
   C. 14 billion
   D. 100 billion

6. The big bang theory states that _____.
   A. all stars will end their lives explosively as supernovas
   B. Earth formed through a series of violent collisions
   C. meteors were responsible for the extinction of the dinosaurs
   D. all matter in the Universe was once confined to a single point

7. Strong evidence that the Universe is expanding comes from the fact that the light emitted from distant galaxies appears to be _____.
   A. red-shifted
   B. blue-shifted
   C. green-shifted
   D. none of the above

8. Italian Renaissance astronomer Galileo was the first person to deduce that planets were distinct entities from stars.
   A. true
   B. false

9. Since the initiation of the Big Bang, the temperature of the Universe has _____.
   A. increased
   B. decreased
   C. stayed about the same

10. Atoms that are heavier than iron are generally produced by _____.
   A. fission reactions within stars
   B. fusion reactions within stars
   C. the explosion of supernovae
   D. the big bang

11. By far the most common elements in the Universe and in our Solar System are _____.
   A. nitrogen and oxygen
   B. iron and manganese
   C. hydrogen and helium
   D. hydrogen and oxygen

12. Which of the following bodies is the smallest?
   A. planet
   B. star
   C. protoplanet
   D. planetesimal

13. Aside from Earth, the terrestrial planets are _____.
   A. Mars, Mercury, and Venus
   B. Mars, Venus, and Jupiter
   C. Jupiter, Saturn, Uranus, and Neptune
   D. Mars and Saturn

14. The gas-giant, or Jovian, planets are _____.
   A. Mars, Mercury, and Venus
   B. Mars, Venus, and Jupiter
   C. Jupiter, Saturn, Uranus, and Neptune
   D. Mars and Saturn

15. The branch of science that studies the structure and history of the Universe is _____.
   A. cosmetology
   B. scientology
   C. cosmology
   D. universalism

16. All objects in the Solar System are in orbit around _____.
   A. Earth
   B. Jupiter
   C. the Sun
   D. the Kuiper Belt

17. An ancient Greek philosopher concluded (correctly) that _____.
    A. the Earth was spherical (round)
    B. the Sun was the center of the whole Universe
    C. the Sun was the center of the Earth's orbit
    D. the Earth was the center of the Universe

18. The circumference of Earth is most nearly _____.
    A. 400 km
    B. 4,000 km
    C. 40,000 km
    D. 4,000,000 km

19. A light year is a unit that measures _____.
    A. time
    B. mass
    C. distance
    D. luminous intensity

20. Our Sun belongs to a galaxy known as _____.
    A. Andromeda
    B. Cepheus
    C. the Milky Way
    D. the Stratosphere

21. In agreement with the Big Bang theory, our Universe is _____.
    A. expanding
    B. contracting
    C. static (unchanging)

22. The stream of charged particles given off by the Sun, which prevented the accumulation of hydrogen and helium during the formation of the terrestrial planets, is called _____.
    A. the aurora borealis
    B. solar wind
    C. the Sun's corona
    D. the Van Allen belts

23. Chemically, the Moon is quite similar to _____.
    A. seawater
    B. Earth's crust
    C. Earth's mantle
    D. Earth's core

24. Foucault's experiment with a pendulum proved that _____.
    A. Earth is the center of the Universe
    B. Earth revolves around the Sun
    C. Earth rotates about an internal axis
    D. the Sun revolves around Earth

25. Humans first realized that the Earth was spherical _____.
    A. as a result of the voyages of Christopher Columbus
    B. when Magellan's crew was able to sail completely around the world
    C. during the Renaissance
    D. during the time of Aristotle in ancient Greece

26. Differentiation of the core from the mantle early in Earth's history was possible because the planet was _____ at the time.
    A. very cold
    B. very hot
    C. very small
    D. the only planet in the Solar System

27. The metal alloy that makes up the core of Earth is _____ as compared to the rocky mantle.
    A. less dense
    B. denser
    C. very similar in chemistry and density
    D. distinct in chemistry but of very similar density

28. Earth's surface is protected from solar wind and cosmic radiation by _____.
    A. Earth's gravitational field
    B. Earth's magnetic field
    C. a large metallic shield launched into orbit by NASA in the 1960s
    D. a powerful stream of ions emitted by the Sun

29. The shape of Earth's magnetic field is approximately that of a _____.
    A. monopole
    B. dipole (such as that produced by a bar magnet)
    C. torus, a donut-shaped ring parallel to Earth's equator

30. Presently, Earth's atmosphere is dominated by which two gases?
    A. hydrogen and oxygen
    B. carbon dioxide and methane
    C. nitrogen and oxygen
    D. nitrous oxide and sulfur dioxide

31. In the whole Earth, the four most common elements are oxygen, silicon, magnesium, and _____.
    A. copper
    B. lead
    C. iron
    D. zinc

32. As compared to ultramafic rocks, mafic rocks have a _____.
    A. greater proportion of silica
    B. lesser proportion of silica
    C. greater proportion of iron and magnesium atoms

33. By mass, the four most abundant elements in the Earth are oxygen, silicon, magnesium, and _____.
    A. hydrogen
    B. carbon
    C. helium
    D. iron

34. Hot, liquid rock beneath the surface of the Earth is termed _____.
    A. lava
    B. magma
    C. volatiles
    D. brimstone

35. A fracture in the crust, where rocks slide past one another, is termed a _____.
    A. fold
    B. fault
    C. flying layer
    D. frictional discontinuity

36. The boundary between the crust and mantle is marked by a seismic-velocity discontinuity called _____.
    A. the Edsel
    B. the Moho
    C. Lyell's surface
    D. the crantle

37. As seismic (earthquake-generated) waves travel downward and reach the Moho, they _____.
    A. speed up
    B. slow down
    C. continue at the same velocity
    D. are all reflected directly back toward the surface

38. Earth's magnetic field is generated by _____.
    A. the flow of the liquid inner core
    B. the flow of the liquid outer core
    C. the convective flow of the mantle
    D. magnetic minerals within the crust

39. The lithosphere is composed of the _____.
    A. crust only
    B. crust, mantle, and outer core
    C. top 100 m of sediments and sedimentary rocks
    D. crust and the uppermost part of the mantle

40. Moving into the interior of Earth, temperature _____.
    A. and pressure both increase
    B. and pressure both decrease
    C. increases, but pressure stays nearly the same
    D. remains remarkably constant, but pressure increases

41. The thickness of Earth's crust varies from _____.
    A. 100 to 500 m
    B. 1 to 10 km
    C. 5 to 500 km
    D. 7 to 70 km

42. Of the three primary chemical layers of the Earth (crust, mantle, core), which is the thickest layer?
    A. crust
    B. mantle
    C. core

43. Which of Earth's layers has the greatest density?
    A. crust
    B. mantle
    C. core

44. With increasing altitude, the concentration of gases in our atmosphere _____.
    A. becomes denser
    B. becomes less dense
    C. remains the same
    D. increases for the first 10 km, then starts to decline

45. The two most common elements in the crust of Earth are _____.
    A. iron and calcium
    B. magnesium and manganese
    C. oxygen and hydrogen
    D. oxygen and silicon

46. The metallic content of Earth's core is _____.
    A. likely similar to what has been found in metallic meteorites
    B. partly liquid and partly solid
    C. an iron alloy (mostly iron with a few other elements mixed in)
    D. all of the above

47. As compared to continental crust, the rocks that make up oceanic crust are _____.
    A. denser
    B. made of minerals that contain more silica
    C. thicker
    D. all of the above

48. The Moho _____.
    A. lies at uniform depth everywhere it is found in Earth
    B. is found deeper underneath continents than under oceans
    C. is found deeper underneath oceans than under continents
    D. is found well below the crust/mantle boundary

49. The lithosphere lies directly above the _____.
    A. transition zone
    B. crust
    C. asthenosphere
    D. lower mantle

50. As compared to the asthenosphere, the lithosphere is _____.
    A. cooler and more able to flow
    B. hotter and more able to flow
    C. cooler and less able to flow
    D. hotter and less able to flow