Name _____ Class _____ Date _____

Assessment

Chapter Test A

Chapter: The Sun

MATCHING

In the space provided, write the letter of the description that best matches the term or phrase.

_____ 1. radiative zone
_____ 2. photosphere
_____ 3. aurora
_____ 4. corona
_____ 5. solar flare
_____ 6. chromosphere
_____ 7. convective zone
_____ 8. core
_____ 9. sunspot
_____ 10. prominence

a. at the center of the sun
b. outermost layer of the sun's atmosphere
c. region of the sun from which energy moves upward
d. dark, cooler area on the sun
e. glowing cloud of gas that arches over the sun's surface
f. layer of sun's atmosphere that glows with a reddish color
g. area of the sun closest to the core
h. visible surface of the sun; innermost layer of the sun's atmosphere
i. violent, explosive release of solar energy
j. colored light resulting from solar wind interacting with Earth's atmosphere

MULTIPLE CHOICE

In the space provided, write the letter of the answer choice that best completes each statement or best answers each question.

_____ 11. How long is the average sunspot cycle?
a. 27 days
b. 21 years
c. 11 years
d. 365 days

_____ 12. What is the hottest layer of the sun's atmosphere called?
a. convective zone
b. corona
c. radiative zone
d. photosphere

_____ 13. Production of energy in the sun is the result of
a. nuclear division.
b. nuclear fission.
c. nuclear fusion.
d. nuclear fissure.

_____ 14. The temperature of the sun's core is approximately
a. 15,000,000 °C.
b. 20,000,000 °C.
c. 4,000 °C.
d. 150,000 °C.

_____ 15. How do sunspots form?
a. Magnetic fields increase energy transfer in the convective zone.
b. Magnetic fields reduce energy transfer in the convective zone.
c. The radiative zone reduces energy transfer to the core.
d. The core shuts down and reduces energy transfer.

_____ 16. What elements make up most of the sun's mass?
a. carbon and oxygen
b. carbon and hydrogen
c. carbon and nitrogen
d. hydrogen and helium

_____ 17. Which of the following are parts of the sun's atmosphere?
a. nucleus and core
b. radiative zone and convective zone
c. photosphere and chromosphere
d. core and photosphere

_____ 18. Particles thrown off the sun's corona that can affect Earth's magnetic field are called
a. a coronal mass injection.
b. a coronal mass ejection.
c. nuclear fusion.
d. a sunspot.

_____ 19. During nuclear fusion in the sun, which of the following occurs?
a. Atomic nuclei split apart.
b. The aurora australis appears.
c. Hydrogen nuclei combine to produce a helium nucleus.
d. A solar eclipse results.

_____ 20. Einstein's equation $E = mc^2$ helps scientists understand the sun's energy because the equation
a. describes nuclear fission.
b. explains how mass can be converted into huge amounts of energy.
c. describes solar flares.
d. explains a star's specific wavelengths of light.

Name _____ Class _____ Date _____

Assessment

Chapter Test B

Chapter: The Sun

MATCHING

In the space provided, write the letter of the definition that best matches the term or phrase.

_____ 1. chromosphere
_____ 2. convective zone
_____ 3. radiative zone
_____ 4. photosphere
_____ 5. aurora
_____ 6. corona
_____ 7. sunspot
_____ 8. solar flare
_____ 9. nuclear fusion
_____ 10. prominence

a. visible surface of the sun
b. region between the sun's core and convective zone, where energy moves by radiation
c. region between the sun's radiative zone and photosphere, where energy is carried upward by convection
d. thin layer of the sun above the photosphere
e. colored light resulting from the interaction of solar wind and Earth's magnetosphere
f. an explosive release of energy that comes from the sun
g. a loop of incandescent gas that extends above the photosphere
h. dark area of the photosphere of the sun; has a strong magnetic field
i. energy-releasing process in which nuclei of small atoms combine to form more-massive nuclei
j. outermost layer of the sun's atmosphere

MULTIPLE CHOICE

In the space provided, write the letter of the answer choice that best completes each statement or best answers each question.

_____ 11. How is matter converted into energy in the sun's core?
a. Helium isotopes decay, releasing energy in the process.
b. Hydrogen nuclei collide and fuse, releasing energy in the process.
c. Hydrogen nuclei collide and fuse, consuming energy.
d. Hydrogen nuclei split apart, releasing energy in the process.

_____ 12. How does the sun's radiative zone compare with the convective zone?
a. The convective zone is hotter and closer to the sun's core.
b. The radiative zone is cooler and closer to the sun's core.
c. The convective zone is cooler and closer to the sun's core.
d. The radiative zone is hotter and closer to the sun's core.

_____ 13. What is a prominence on the sun?
a. a part of the sun's corona; a cloud of colored gas
b. a disturbance in the sun's atmosphere; an arched, glowing cloud of gas
c. a part of the convective zone; a cool area with powerful magnetic fields
d. a magnetic disruption in the sun's photosphere

_____ 14. Which of the following are all part of the sun's atmosphere?
a. photosphere, aurora, corona
b. chromosphere, aurora, photosphere
c. photosphere, corona, chromosphere
d. convective zone, photosphere, corona

_____ 15. What is a coronal mass ejection?
a. mass from the convective zone thrown into space from the sun
b. coronal gas thrown into space from the sun
c. mass ejected from the sun; can affect the sun's magnetic field
d. particles thrown off the chromosphere

_____ 16. One of the final products of the fusion of two hydrogen nuclei in the sun is always
a. a helium nucleus.
b. a more-massive hydrogen nucleus.
c. hydrogen protons.
d. two nuclei made up of two neutrons and one proton.

_____ 17. Einstein's equation $E = mc^2$ helps scientists understand the sun's energy because the equation
a. describes the process of nuclear fission.
b. calculates how much mass can be converted into energy.
c. describes what happens in solar flares.
d. explains how geomagnetic storms cause coronal mass ejections.

_____ 18. What are northern lights?
a. coronas
b. prominences
c. solar flares
d. auroras

_____ 19. Magnetic fields on the sun are produced by the sun's uneven rotation and
a. the movement of sunspots on the sun's surface.
b. the movement of gases in the corona.
c. gases in the convective zone.
d. gases in the radiation zone.