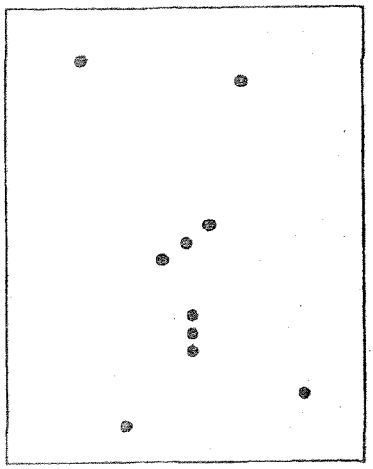
Regents Practice Questions

Key

1. The diagram below represents the major stars of the constellation Orion, as viewed by an observer in New York State.



Which statement best explains why Orion can be observed from New York State on December 21 but not on June 21?

(1) Orion has an eccentric orbit around Earth.
(2) Orion has an eccentric orbit around the Sun.
(3) Earth revolves around the Sun.
(4) Earth rotates on its axis.

2. Why do stars appear to move through the night sky at the rate of 15 degrees per hour?

(1) The Earth actually moves around the Sun at a rate of 15° per hour.
(2) The stars actually move around the center of the galaxy at a rate of 15° per hour.
(3) The Earth actually rotates at a rate of 15° per hour.
(4) The stars actually revolve around the Earth at a rate of 15° per hour.

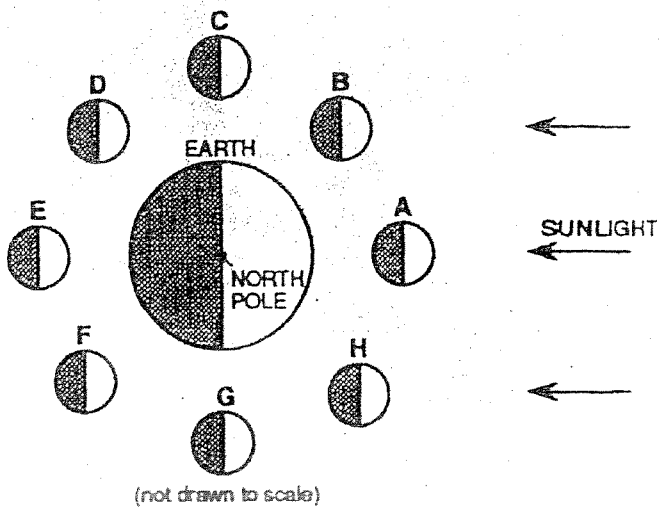
3. To an observer in New York State, stars appear to rise in the

(1) north
(2) south
(3) east
(4) west

4. How does the position of Polaris appear to change as an observer travels due north from the Equator?

(1) The angle of Polaris above the northern horizon decreases.
(2) The angle of Polaris above the northern horizon increases.
(3) Polaris appears to move westward.
(4) Polaris appears to move eastward.

5. The diagram below represents eight positions of the Moon as it revolves around the Earth.



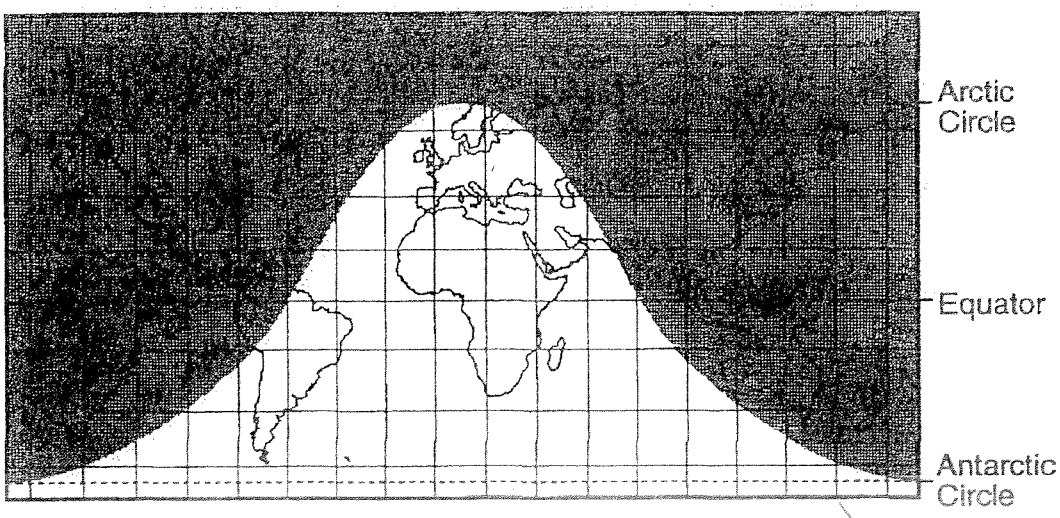
When viewed from the Earth, which phase of the Moon will be seen when the Moon is at point *E*?

(1) first quarter
(2) full moon
(3) new moon
(4) last quarter

"I'LL TELL YOU WHAT'S BEYOND THE OBSERVABLE UNIVERSE — LOTS AND LOTS OF UNOBSERVABLE UNIVERSE."

Name: _____

The shaded portion of the map below indicates areas of night and the unshaded portion indicates areas of light.

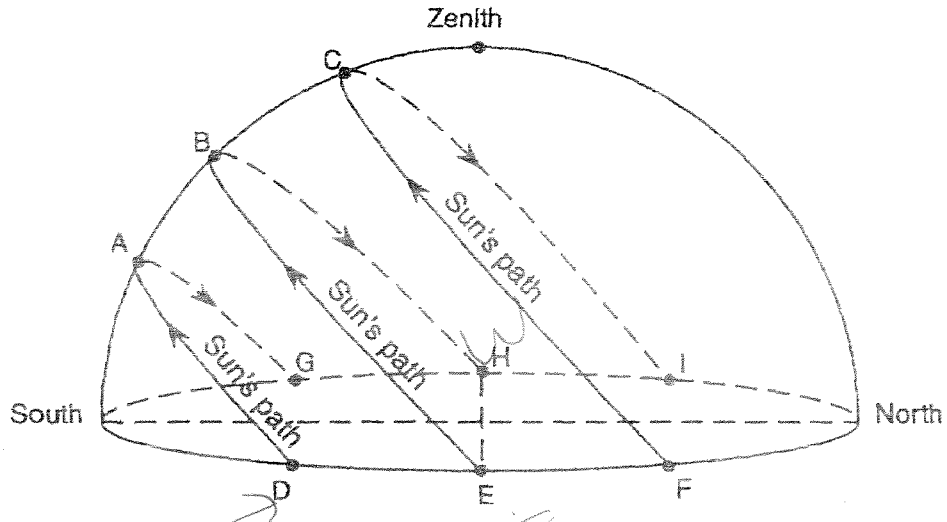


(Longest daylight period)

hat day of the year is best represented by the map?

(1) March 21 (2) June 21 (3) September 21 (4) December 21

The diagram below represents a plastic hemisphere upon which lines have been drawn to show the apparent paths of the Sun at a cation in New York State on the first day of each season. Letters *A* through *I* represent points on the paths.



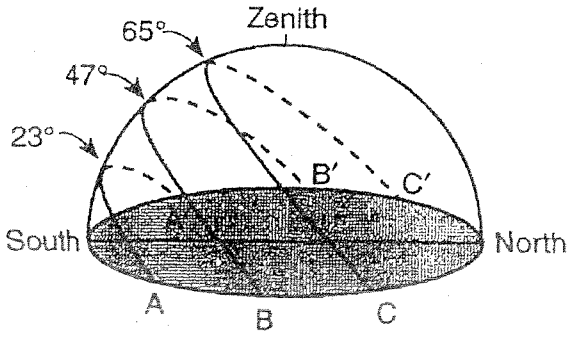
(Sunset) (Sunrise)

hich point represents the sunrise location on the first day of winter?

(1) *G* (2) *F* (3) *E* (4) *D*

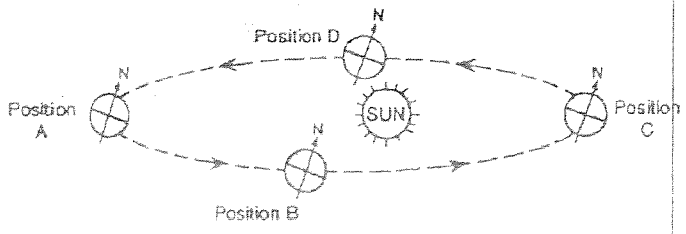
8. As seen from New York State, the noon Sun is
   (1) directly overhead every day
   (2) directly overhead on the first day of spring and fall
   (3) directly overhead only on the first day of summer
   never directly overhead

9. The model below shows the apparent path of the Sun on 3 days at a certain location in New York State.



What could be the Sun's apparent path at this location on March 21?
(1) along path *A*–*A*′
(2) south of path *A*–*A*′
(3) along path *B*–*B*′
(4) north of path *C*–*C*′

10. The diagram below represents four positions of the Earth as it revolves around the Sun.



(NOT DRAWN TO SCALE)

At which position is the Earth located on December 21?
(1) *A*
(2) *B*
(3) *C*
(4) *D*

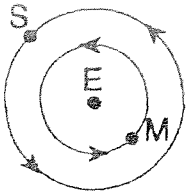
11. Base your answer to the following question on the *Earth Science Reference Tables*.

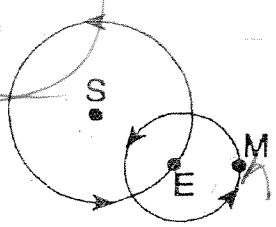
A Red giant star would most likely have a temperature of
(1) 5,000°C
(2) 10,000°C
(3) 20,000°C
(4) 30,000°C

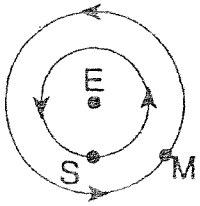
Base your answer to the following question on the *Earth Science Reference Tables*.

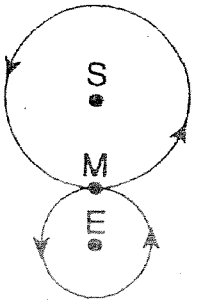
What type of star is Polaris?
(1) White Dwarf
(2) Supergiant
(3) Red Giant
(4) Main Sequence

12. Which diagram best represents a portion of the heliocentric model of the solar system? [*S* = Sun, *E* = Earth, and *M* = Moon]

(1)


(3)


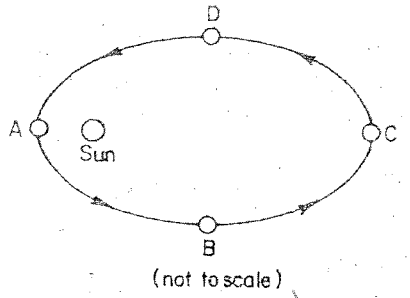
(2)


(4)


13. Base your answer to the following question on the *Earth Science Reference Tables*.

In the H-R diagram, 90 percent of all stars fall
(1) in the Red Dwarf region.
(2) in the Supergiant region.
(3) among the White Dwarfs.
(4) on the Main Sequence.

14. The diagram below shows a planet's orbit around the Sun.



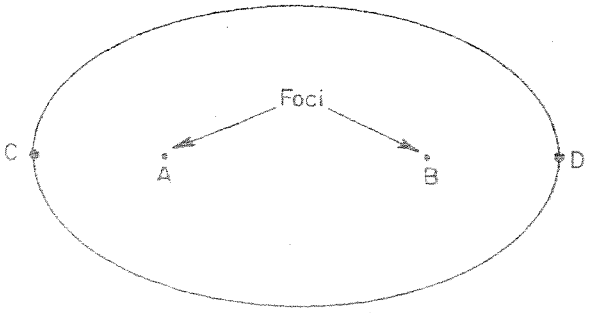
(not to scale)

At which location is the planet's orbital velocity greatest?
(1) *A*
(2) *B*
(3) *C*
(4) *D*

15. Base your answer to the following question on the *Earth Science Reference Tables*.

What is the eccentricity of an ellipse in which the distance between the foci is 2 centimeters and the length of the major axis is 5 centimeters?
(1) 2.5
(2) 0.2
(3) 0.5
(4) 0.4

16. According to the *Earth Science Reference Tables*, what is the approximate eccentricity of the ellipse shown below?



DRAWN TO SCALE

(1) .0.50
(2) 2.0
(3) 0.25
(4) 4.0

17. Base your answer to the following question on the *Earth Science Reference Tables*.

Which planet takes longer for one spin on its axis than for one orbit around the Sun?
(1) Mercury
(2) Venus
(3) Earth
(4) Mars

18. Base your answer to the following question on the *Earth Science Reference Tables*.

Which of the following has the lowest density?
(1) the planet Saturn
(2) the planet Jupiter
(3) the planet Earth
(4) salt water

19. Which planet's diameter is approximately four times Earth's diameter?
(1) Venus
(2) Jupiter
(3) Saturn
(4) Uranus

20. According to the *Earth Science Reference Tables*, three planets known as gas giants because of their large size and low density are
(1) Venus, Neptune, and Jupiter
(2) Jupiter, Saturn, and Venus
(3) Jupiter, Saturn, and Uranus
(4) Venus, Uranus, and Jupiter

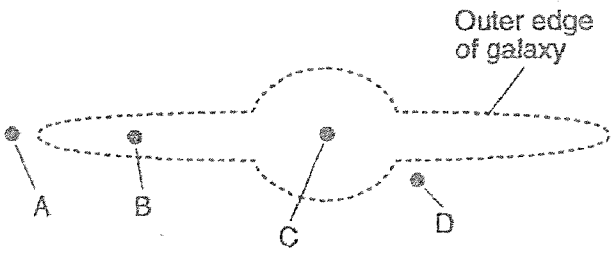
21. Compared to the Jovian planets, terrestrial planets are
(1) more dense and more massive.
(2) less dense and more massive.
(3) more dense and less massive.
(4) less dense and less massive.

22. Which stars are the youngest?
(1) Supergiant
(2) White dwarf
(3) Blue star
(4) Red Dwarfs

23. The probable fate of our sun is
(1) to expand as a red giant, undergo a nova outburst and end as a white dwarf
(2) to shrink to a white dwarf then eventually expand to a red giant
(3) become hotter and expand into a blue supergiant
(4) to become a black hole

Name: _____

24. The diagram below represents a side view of the Milky Way Galaxy.



(Not drawn to scale)

At approximately which position is Earth's solar system located?

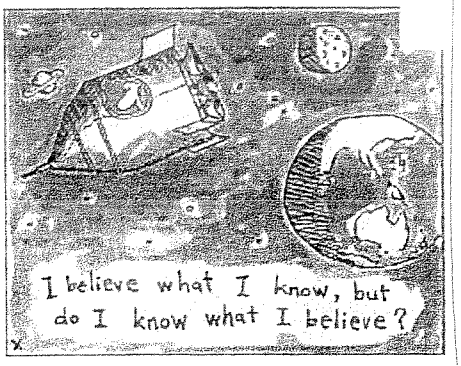
(1) A
(2) B
(3) C
(4) D

In which list are celestial features correctly shown in order of increasing size?

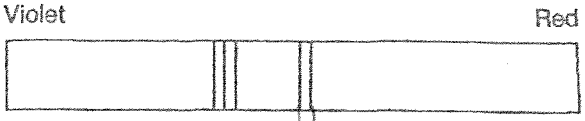
(1) galaxy → solar system → universe → planet
(2) solar system → galaxy → planet → universe
(3) planet → solar system → galaxy → universe
(4) universe → galaxy → solar system → planet

Billions of stars in the same region of the universe are called

(1) solar systems
(2) asteroid belts
(3) constellations
(4) galaxies

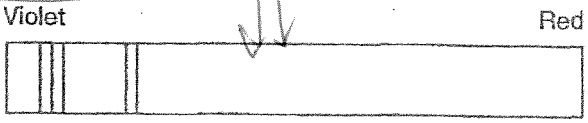


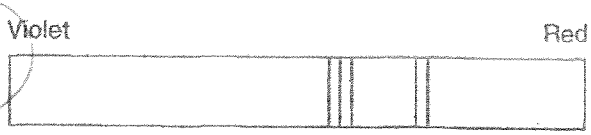
27. The diagram below represents a standard dark-line spectrum for an element.



redshift

The spectral lines of this element are observed in light from a distant galaxy. Which diagram represents these spectral lines?

(1)


(2)


(3)


(4)


28. Most astronomers agree that at the present time universe is

(1) contracting
(2) expanding
(3) staying the same size
(4) expanding and contracting regularly

29. According to what astronomers have observed to date, the further a galaxy is away from us

(1) the slower it is moving away from us
(2) the faster it is moving away from us
(3) the slower it is moving towards us
(4) the faster it is moving towards us