CIRCLE THE CORRECT ANSWER (1-12)

1) Cepheid variable stars have fluctuating masses. Some astronomers attempt to use these stars to

a. Compare to dying stars to determine time of stellar death
b. Mark distances throughout a galaxy
c. Map a solar system
d. Both b and c

2) Cygnus X-1 is a dead star being studied by astronomers using its twin star in the binary system in which they both occupy. If astronomers are using binary x-rays to study Cygnus X-1, it is safe to assume it is a

a. Black hole
b. Red giant
c. White dwarf
d. Neutron star

3) When a red giant erupts into a supernova and its density is equivalent to about eight solar masses, it will
a. Collapse again into a black hole
b. Stabilize into a neutron star
c. Shrink further into a white dwarf
d. Explode again into an ultranova

4) Which type of Cepheid would you use to determine the distance to the Galactic center?

a. Type I Cepheid
b. Classical Cepheid
c. Type II Cepheid
d. Tertiary Cepheid

5) Every planet has the same T2/R3 ratio in our solar system. This was discovered through the use of _____

a. Spectroscopic parallax
b. Cepheids
c. Kepler's Third Law
d. Kepler's First Law

6) A dying star must have 8 times and no more than 50 times the solar mass of our sun to erupt into this when it dies.

a. Type II supernova
b. Type I supernova
c. Type III supernova
d. Type IV supernova

7) The brightness of a star, otherwise known as this, is one of the key factors used in the spectroscopic parallax formula to determine distance between stars and other celestial bodies.

a. Luster
b. Radiance
c. Luminescence
d. Luminosity

8) The IC 1396 Nebula, or Elephant's Trunk Nebula is _____ light years from Earth.

a. 15,000
b. 9,800
c. 142
d. 2,400

9) The sun is made up of 99.9% of _____ and _____.

a. Oxygen and Hydrogen
b. Hydrogen and Sulfur
c. Carbon and Silicon
d. Hydrogen and Helium

10) Located in the RCW 57 region, this large nebula sends back new photos of giant stars being created.

a. NBD 1200
b. HQN 3580-12I
c. NGC 3582
d. SXP 1062

11) In a typical H-R diagram, stars are graphed by these two characteristics

a. Temperature and luminosity
b. Luminosity and distance
c. Distance and temperature
d. Size and distance

12) Kepler's first law of stellar revolution determines that planets revolve around the sun on an imaginary line called a(n)

a. Faux-path
b. Ellipse
c. Stellar line
d. Planetary passage

Temperature (Kelvin)
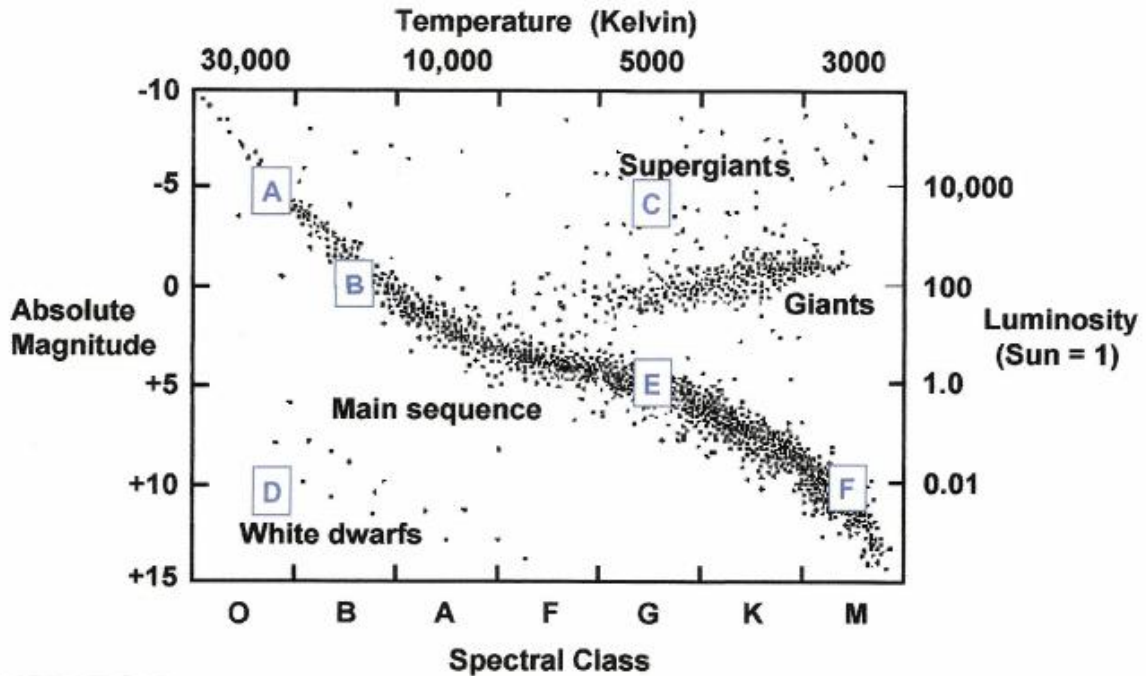
14. Of the stars labeled on the diagram above, which two are the hottest?

15. Of the stars labeled on the diagram above, which one has the largest radius?

16. Is star A or B brighter?

17. Does star A or C radiate more energy per unit area?

18. At what wavelength does star E radiate the most energy?

19. If both star B and star D appear equally bright in the night sky, which is farther away from the observer?

20. Describe the utility of studying star clusters.

21. Explain why Cepheid variable stars are key to understanding the distance scale of the universe.

22. What is the Rho Ophiuchi Cloud Complex? Describe what it is composed of, its location and the probable cause of the events taking place there.

23. Use the light curve of a Cepheid variable shown below to calculate the distance to a galaxy.