

QUIZ #5

1. A star becomes a red giant after
 - a) ejecting its outer layers as a planetary nebula.
 - b) it exhausts all available fusion processes.
 - c) hydrogen fusion in its core begins.
 - d) the hydrogen in its core has been (almost) completely converted to helium.**

2. If we look at star clusters of greater and greater ages, we see that
 - a) the brightest remaining main-sequence stars are progressively lower in mass.**
 - b) there are fewer and fewer red giants.
 - c) there are progressively more of the hot stars at the top of the main sequence.
 - d) there are fewer red dwarfs.

3. Stars along the Main Sequence on the H-R diagram have which in common?
 - a) Helium cores.
 - b) Iron production in the core.
 - c) Energy transport by convective motions from the star's core to its surface.
 - d) Energy production by fusing hydrogen to helium in the core.**

4. Most of the variety we observe in stars' spectra is due to different
 - a) rotation rates.
 - b) **surface temperatures.**
 - c) chemical compositions.
 - d) fusion stages in their cores.

5. Which of these has the longest lifetime?
 - a) Planetary nebula.
 - b) Red dwarf.**
 - c) Red supergiant.
 - d) The Sun.

6. To determine a star's distance using parallax, we need to measure
 - a) its luminosity.
 - b) its apparent size.
 - c) changes in its Doppler shift.
 - d) its position in the sky at different times of the year.**

7. The solar cycle is associated with periodic changes in the Sun's
 - a) neutrino emission.
 - b) magnetic field.
 - c) diameter.
 - d) fusion rate.

8. To determine a star's luminosity, we need to know its
 - a) brightness and distance.**
 - b) temperature and brightness.
 - c) diameter and brightness
 - d) size and distance.

(over)

9. The net effect of processes in the sun's core is to produce energy by
- a) start with hydrogen and transform it into helium.**
 - b) start with helium and transform it into hydrogen.
 - c) start with hydrogen and transform it into iron.
 - d) start with iron and transform it into hydrogen.
10. Sunspots are a side effect of
- a) changes in the rate of energy production within the Sun.
 - b) loops in the Sun's magnetic field.**
 - c) solar neutrinos.
 - d) the planets' gravitational pull.