ASTRO 1050 – Survey of Astronomy
October 24, 2008 Midterm Examination #3
Practice Quiz

Stars

1. Which of the following spectral classes would most represent a star with a surface temperature of 30,000 K?

   A. G
   B. M
   C. O
   D. Spectral class and temperature are not related.
   E. None of the above.

2. About 90% of stars are classified as

   A. Red giants
   B. Red dwarfs
   C. Main sequence
   D. White dwarfs
   E. White giants

3. What is the trend in the stellar sizes vs. temperature for main sequence stars?

   A. As temperature increases, the size increases.
   B. As temperature increases, the size decreases.
   C. Temperature is not related to size.
   D. The trend depends on the luminosity.

4. The total main sequence lifetime of stars starting out as spectral type O is roughly

   A. 1 million years
   B. 10 million years
   C. 10 billion years
   D. 100 billion years

5. Star A's fusion rate is two times Star B's fusion rate. How does Star A's mass compare to Star B's mass?

   A. Star A's mass will be more than two times that of Star B.
   B. Star A's mass will be two times that of Star B.
   C. Star A's mass will be more than Star B, but less than twice as massive.
   D. Star A's mass will be the same as that of Star B.
   E. Star A's mass will be half that of Star B.

6. Star C has a mass that is three times the mass of Star D. If both stars are main sequence stars, which is true about the temperatures of Star C and Star D?

   A. Star D is hotter than Star C.
   B. Star D is cooler than Star C.
   C. Star D is the same temperature as Star C.
   D. There is insufficient information to determine temperature.

Galaxies & the Universe

7. Stars A and B have the same apparent brightness or flux. Star A is 10 parsecs away from you while Star B is 30 parsecs away from you. Which of the following is a possible combination of absolute magnitudes for Stars A and B?

   A. Star A: $M = 0$ Star B: $M = 0$
   B. Star A: $M = 0$ Star B: $M = 2.5$
   C. Star A: $M = 2.5$ Star B: $M = 0$
   D. Star A: $M = -2.5$ Star B: $M = 2.5$
   E. None of the above.

8. As the distance to galaxies increase,

   A. its apparent velocity increases.
   B. its apparent velocity decreases.
   C. apparent velocity stays the same.
   D. Apparent velocity and distance of a galaxy are not related.

9. The conclusion that the universe is expanding is a consequence of

    A. Hubble's law
    B. Kepler's laws
    C. Newton's laws
    D. Einstein's law

10. Why are spiral galaxies generally blue and elliptical galaxies generally red?

    A. Spiral galaxies are moving toward you so they are blueshifted while elliptical galaxies are moving away from you so they are redshifted.
    B. The gas and dust in spiral galaxies filter out all but the blue light from stars.
    C. Stars are forming in the spiral galaxies so there are many more high mass, hot, blue stars present, whereas there are no new stars forming in elliptical galaxies.
    D. Only red stars form in elliptical galaxies and only blue stars form in spiral galaxies.