

TEAM NUMBER \_\_\_\_\_ TEAM NAME \_\_\_\_\_

1. A Hertzsprung-Russell diagram reveals the lives of stars because it shows stars that
  - A. all have the same age.
  - B. all have the same mass.
  - C. all have the same chemical composition.
  - D. are at different stages of their lives.
  
2. For a star like our sun, once fusion reactions in the main sequence phase stop, the star will next become a
  - A. white dwarf
  - B. black dwarf
  - C. red giant
  - D. blue supergiant
  
3. What observation leads us to the inference that stars evolve?
  - A. They have different spectral classes.
  - B. They have different luminosity classes.
  - C. They have different masses.
  - D. We can directly see them evolve.
  
4. In an evolving cluster, which stars become red giants first?
  - A. Stars with masses like the sun's.
  - B. Stars with sizes smaller than the sun's.
  - C. The most massive stars (upper main sequence).
  - D. The stars with the most heavy elements.
  
5. If a protostar's mass is too low to begin fusion, instead of forming a star, it will become a \_\_\_\_\_.
  - A. white dwarf
  - B. brown dwarf
  - C. black dwarf
  - D. red giant
  
6. A sequence of thermonuclear fusion processes inside massive stars can continue to transform the nuclei of elements such as carbon, oxygen, etc., into heavier nuclei AND also generate excess energy up to a limit beyond which no further energy-producing reactions can occur. The element that is produced when this limit is reached is
  - A. carbon
  - B. oxygen
  - C. silicon
  - D. iron
  - E. uranium
  
7. Stars that have ejected a planetary nebula go on to become
  - A. red giants.
  - B. supernovae.
  - C. protostars.
  - D. white dwarfs.
  
8. Which spectral sequence is correctly arranged in order of increasing wavelength?
  - A. Radio, infrared, visible, ultraviolet, x-ray, gamma ray
  - B. Infrared, visible, ultraviolet, radio, gamma ray, x-ray
  - C. Gamma ray, x-ray, ultraviolet, visible, infrared, radio
  - D. Visible, ultraviolet, infrared, x-ray, radio, gamma ray
  
9. If a star is observed to have a high degree of red shift, it is:
  - A. moving toward the observer rapidly.
  - B. moving away from the observer rapidly.
  - C. rotating extremely rapidly on its axis.
  - D. undergoing a rapid change in stellar fusion reactions.