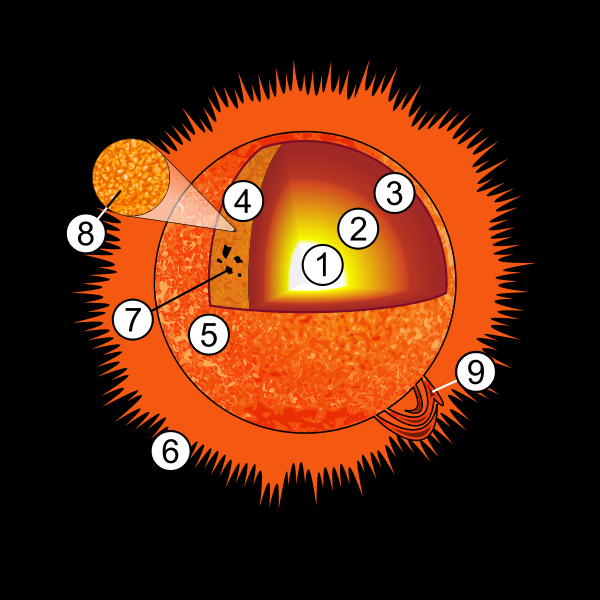
**Astronomy Unit (Chapter 17-20) Test**

**Study Guide**

***Directions:*** *Answer the following questions thoroughly and completely. Use your notes AS WELL AS your textbook to help you. Using other sources would also be advisable.*

1. Define what a star is.
2. Explain how a star’s temperature and color are related to each other. What color of stars tend to be the coolest and what are the hottest?
3. What nuclear process fuels the burning in a star? What is the reaction that occurs (name specifically what and how many atoms are involved)?
4. What is a spectrograph and how can you use it to determine a star’s composition?
5. When measuring the “magnitude” of a star, what is being measured? What is the difference between ***apparent magnitude*** vs. ***absolute magnitude?***
6. How are distances to stars calculated?
7. Explain what ***stellar parallax***is. Draw a diagram.
8. How does a star’s ***actual motion*** compare to its ***absolute motion?***
9. How do stars form? Explain the formation process.
10. Depending on size, list the general and most likely path of stellar evolution for the following stars:
11. Small star
12. Medium (Sun-sized star)
13. Large Star
14. Extremely large star
15. Define the following:
    1. Red giant:
    2. White Dwarf:
    3. Supernova:
    4. Neutron Star:
    5. Black Hole:
16. What are the major characteristics by which astronomers classify stars?
17. What is the HR diagram? What is its function? What variables are needed to plot stars on the HR diagram?
18. What are the outer and inner layers of the sun? Be able to label a diagram of the sun (ignore label 8 on the following diagram).



1. Define the following and know how they form:
   1. Solar Winds:
   2. Solar Flares:
   3. Aurora Borealis:
   4. Sun Spots:
2. What is a light year? How long is one light year? Why use light years to measure spaces between objects in space?
3. Explain how looking at the light from an object that is several hundred or thousands of light years away is like looking into the past?
4. What is an astronomical unit (AU)?
5. What is a galaxy?
6. What are galaxies classified by?
7. What are the three types of galaxies and DEFINE THEIR GENERAL CHARACTERISTICS?
8. What type of galaxy is the Milky way?
9. Why is our position in the Milky Way ideal for us and conducive to space exploration (consider the factor of the vastness of the universe/space)?