Name:

Class:

**Stellar Evolution Review**

1. All stars begin as clouds of gas and \_\_\_\_\_\_\_\_\_\_\_\_\_ called\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. These clouds pull together by \_\_\_\_\_\_\_\_\_\_\_\_\_\_ due to their own mass until they glow as pre-stars called \_\_\_\_\_\_\_\_\_\_\_\_.
3. These pre-stars glow from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and if they have enough mass they will begin \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and be called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ stars that shine.
4. If they DON’T have enough mass they will never start \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to become real stars and instead are a failed star called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that will slowly cool off.
5. Main sequence stars are the \_\_\_\_\_\_\_\_\_\_\_ stage of life for a star and can last \_\_\_\_\_\_\_\_\_\_\_\_ of years if it is a big mass star or \_\_\_\_\_\_\_\_\_\_\_\_ of years if it is a small mass star.
6. Big mass star’s have \_\_\_\_\_\_\_\_\_\_\_\_\_\_ gravity and thus use their fuel at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ speed and their lives last a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ time.
7. The size of a star is the result of the force of \_\_\_\_\_\_\_\_\_\_\_\_\_ pulling inward and the force of \_\_\_\_\_\_\_\_\_\_ pushing outward.
8. The early universe was only made of \_\_\_\_\_\_\_\_\_\_ atoms that formed during the \_\_\_\_\_\_\_\_\_\_\_\_ when the singularity expanded to form our universe.
9. The first atoms to fuse in a star are \_\_\_\_ atoms which are smashed together by gravity to form \_\_\_\_\_\_ atoms and \_\_\_\_\_\_\_\_\_\_ and heat are given off in the process.
10. Older stars have a bigger outward pressure from fusion as they are fusing \_\_\_\_\_\_\_\_\_\_ elements and the entire star gets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in size and the temperature becomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is why they are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_stars.
11. Atoms \_\_\_\_\_\_\_ through \_\_\_\_\_\_\_\_\_\_ have been formed in this way, only existing due to the pressure of gravity fusing them into bigger and bigger elements.
12. The biggest mass stars keep fusing bigger and bigger elements until they reach the atom\_\_\_\_\_\_\_\_\_\_\_\_ . When this atom fuses it \_\_\_\_\_\_\_\_\_\_\_\_ heat and causes the star’s core to rapidly shrink. The shock wave blasts out the outer layers in an explosion called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
13. The core of these exploded stars may collapse until the atoms are crushed into neutrons called a \_\_\_\_\_\_\_\_\_\_\_ star which is about the size of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
14. The Most massive stars continue to collapse to the size of a \_\_\_\_\_\_\_\_\_\_\_\_ and are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because even light cannot escape their gravity.
15. The smaller mass stars cannot keep fusing bigger and bigger atoms as they don’t have enough mass and \_\_\_\_\_\_\_\_\_\_\_ to do this. They eventually run out of fuseable atoms and their core collapses into a hot \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ leaving behind their outer layers to form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which could become another star and planets some day.
16. The core that is left behind is crushed to the size of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. When the white dwarf completely cools it will be a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
18. All stars that generate light can be graphed on the \_\_\_\_\_\_\_\_ Diagram which organizes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ stars in a line across the middle
19. The\_\_\_\_\_\_\_\_\_\_\_\_\_ class main sequence stars in the upper left have the \_\_\_\_\_\_\_\_\_\_\_ mass and will become black holes when they die.
20. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_class main sequence stars are in the lower right and have the \_\_\_\_\_\_\_ mass and will become black dwarfs when they die.
21. The A class main sequence stars are big but not the biggest and will become \_\_\_\_\_\_\_\_\_ when they die.
22. The white dwarfs are \_\_\_\_\_\_\_ in temperature but \_\_\_\_\_\_\_\_\_ in brightness because they have just stopped fusing.
23. The red giants are \_\_\_\_\_\_ in energy because they are fusing bigger elements but they are \_\_\_\_\_\_\_ in temperature because their mass is expanded and spread out.
24. The only element that didn’t come from a star is \_\_\_\_\_\_\_\_\_\_\_ and it formed during the \_\_\_\_\_\_\_\_\_\_\_. Helium up to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ formed in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of stars like main sequence and red giants and elements bigger than \_\_\_\_\_\_\_\_\_\_ formed in the explosions of stars called supernova.
25. Our sun is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ sized star that has lived \_\_\_\_\_\_\_\_\_\_\_\_\_\_years and is half way through its’ lifetime. It will swell in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ stage to the size of Earth’s orbit and shrink to a hot \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_finally dieing as a cold \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because it is a smallish sized star. It isn’t very big or bright but only looks that way because it is so \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to us!