ESS 100 (Stapleton) Name: _____

Practice Quiz: Medium Star Life Cycles + Earth Formation

1. What process gives stars their energy?

   Nuclear Fusion

2. What is a star's main fuel?

   Hydrogen

3. What new substance is produced inside a star when that fuel is used up?

   Helium

4. Put these star life stages in order, from earliest to latest:

   3 2 1 4 5 6

   Main Sequence Star, Protostar, Nebula, Red Giant, White Dwarf, Black Dwarf

   Nebula, Protostar, Main Sequence, Red giant, White dwarf, Black Dwarf

5. Describe the source of energy for each of these stages in a star's life:

   a. Red giant

      Hydrogen fusing outside the star's core

   b. White dwarf

      Compression

   c. Main sequence star

      Hydrogen fusing in the star's core (center)

6. a. How is a star's temperature related to its mass?

      More mass ⇒ Hotter

   b. Explain why a star's temperature is related to its mass in this way.

      More mass ⇒ more pressure

7. Where does the helium in a medium star end up, and why does it go there?

   He ~~goes~~ sinks to the center (core) because it more dense than hydrogen.

8. When our Sun becomes a red giant why will it turn red?

   It will cool down

9. When our Sun becomes a red giant why will it get bigger?

Center is filling with helium, so the fusing hydrogen is moving outward (expanding)

10. When our Sun becomes a white dwarf why will it turn white?

It heats up (white is hotter than red)

~~11.~~ ~~Approximately how many years does the Sun have before it turns into a red giant?~~

Not on Quiz ~~5 billion~~

12. When the Earth was first forming, it wasn't massive enough for gravity to cause its pieces to attract one another. According to the video we watched, what force caused the tiny bits of dust to clump together?

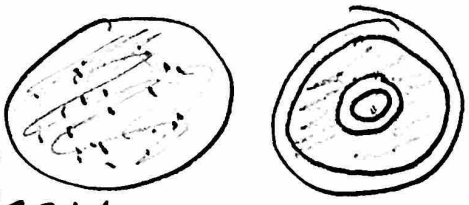
Static Electricity

13. The early Earth was molten and did not have layers.

Not on Quiz a. What does *molten* mean?

Melted, liquid

b. How did Earth's layers (core, mantle, crust, etc.) form?



They separated according to density (densest in the core)

14. What caused the Earth's surface to cool and harden?

Coolness of space

15. What type of rock samples did scientist use to find the age of the Earth?

Meteorites

16. Where do scientists think the Earth's water came from?

Meteorites

17. Where do scientists think the Earth's first oxygen came from?

Blue-green algae ; Cyanobacteria

18. Where did all of our coal, oil, and natural gas deposits come from?

Decaying plants