

1) Why do stars pass quickly along the HR diagram as they reach the Planetary Nebula Phase?

- a) High velocity gas cools quickly, changing the color of the star quickly
- X b) As the outer layers of the star expand, they become more diffuse, exposing more hot inner layers.
- c) As the atmosphere expands, the core shrinks and heats up, becoming bluer.
- d) Planetary nebula are fast moving particles that heat the "Inter stellar medium".

2) ) The primary source of energy for a White Dwarf is

- a) Nuclear fusion
- b) Nuclear fission
- c) gravitational contraction
- X d) stored heat, cooling passively
- e) chemical heat

3) A massive star forms metals heavier than iron

- a) At the end of it's main sequence lifetime
- b) During the red super giant phase
- X c) During a supernova
- d) never

4) What causes a Type-II supernova?

- a) Instability in the nuclear fusion reaction.
- b) Mass from a binary companion that falls onto the surface of a red giant.
- X c) Core collapse of an Iron-forming star.
- d) Electron degeneracy pressure.

5) Long duration Gamma ray bursts are likely to be caused by.

- a) 1 solar-mass black hole colliding with a neutron star.
- X b) core-collapse of a rapidly rotating massive star.
- c) a massive star "swallowing" a black hole.
- d) a neutron star interacting with charged particles in the inter stellar medium.
- e) None of the above, the answer is unknown