

Physics U111 – Introduction to Astronomy – Fall 2007
Professor Vaughn
Quiz #9 – 5 December 2007

True or False (2 points each)

1. The first observation of a pulsar was in the 1960s. (T)
2. A typical solar mass star will eventually burn all its nuclear fuel and end up as a white dwarf. (T)
3. The cores of many type II supernovae collapse and become neutron stars. . (T)
4. As stars get older, they move up and to the left on the main sequence. (F)
5. Astrophysicists believe that elements heavier than iron are formed only in supernova explosions. . (T)

Fill in the blanks (3 points each)

1. When a white dwarf pulls in matter from a binary companion, it may lead to a brief explosion called a nova.
2. The onset of helium burning in a solar mass star is signaled by a helium flash.
3. The Crab nebula is the remnant of a supernova seen by Chinese astronomers in 1054.
4. If a white dwarf acquires more than 1.4 solar masses, then a (type I) supernova occurs.

Multiple choice (3 points each)

1. The heaviest element to be found in the core of a burning star is
a) helium b) carbon c) silicon **d) iron** e) lead
2. The temperature required to ignite carbon fusion is about
a) one million K b) ten million K c) 100 million K
d) 600 million K e) 10 billion K
3. A black hole with the mass of the Sun has a radius about
a) 3 km b) 1000 km c) 6400 km d) 700,000 km e) 10^7 km