Quiz 7
Physics 105
15 November 2002

• 1. A nucleus with 2 neutrons and 2 protons is called
   (a) an alpha particle.
   (b) $^4$He.
   $\Rightarrow$ (c) both (a) and (b).
   (d) heavy hydrogen.
   (e) helium.

• 2. The particles emitted in beta and gamma decay are respectively
   (a) electrons and protons.
   $\Rightarrow$ (b) electrons and photons.
   (c) photons and $^4$He.
   (d) photons and gravitons.
   (e) bosons and fermions.

• 3. The nucleus $^{238}\text{U}$ will decay by
   (a) $\beta$ emission to $^{238}\text{Np}$.
   (b) $\beta$ emission to $^{238}\text{Pa}$.
   $\Rightarrow$ (c) $\alpha$ emission to $^{234}\text{Th}$.
   (d) $\alpha$ emission to $^{242}\text{Pu}$.
   (e) $\gamma$ emission to $^{238}\text{U}$.

• 4. The nucleus $^{56}\text{Fe}$ contains
   (a) 26 protons and 56 neutrons.
   $\Rightarrow$ (b) 26 protons and 30 neutrons.
   (c) 26 neutrons and 56 protons.
   (d) 26 neutrons and 30 protons.
   (e) 26 noodles and 30 peas.