

Name: \_\_\_\_\_

## Quiz 7

Physics 105

15 November 2002

- 1. A nucleus with 2 neutrons and 2 protons is called
  - (a) an alpha particle.
  - (b)  ${}^4\text{He}$ .
  - $\Rightarrow$  (c) **both (a) and (b).**
  - (d) heavy hydrogen.
  - (e) helionium.
  
- 2. The particles emitted in beta and gamma decay are respectively
  - (a) electrons and protons.
  - $\Rightarrow$  (b) **electrons and photons.**
  - (c) photons and  ${}^4\text{He}$ .
  - (d) photons and gravitons.
  - (e) bosons and fermions.
  
- 3. The nucleus  ${}_{92}^{238}\text{U}$  will decay by
  - (a)  $\beta$  emission to  ${}_{93}^{238}\text{Np}$ .
  - (b)  $\beta$  emission to  ${}_{91}^{238}\text{Pa}$ .
  - $\Rightarrow$  (c)  **$\alpha$  emission to  ${}_{90}^{234}\text{Th}$ .**
  - (d)  $\alpha$  emission to  ${}_{94}^{242}\text{Pu}$ .
  - (e)  $\gamma$  emission to  ${}_{92}^{238}\text{U}$ .
  
- 4. The nucleus  ${}_{26}^{56}\text{Fe}$  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.