

Name: _____

Quiz 6
Physics 105
8 November 2002

- 1. De Broglie's idea was that
 - (a) a wave can produce an interference pattern when passing through two slits.
 - (b) a wave could behave like a particle.
 - ⇒ **(c) a material particle has wave properties.**
 - (d) a material particle has definite position and speed.
 - (e) waves and particles are figments of our imagination.

- 2. The energy of a photon is
 - (a) proportional to its wavelength.
 - ⇒ **(b) proportional to its frequency.**
 - (c) independent of its wavelength.
 - (d) independent of its frequency.
 - (e) zero.

- 3. Passing electricity through a gas causes the atoms to emit
 - ⇒ **(a) light at a collection of specific frequencies called a line spectrum.**
 - (b) light in a continuous spectrum.
 - (c) nothing at all.
 - (d) neutrons.
 - (e) gamma rays.

- 4. An electron in an atom
 - (a) can have any value of energy.
 - ⇒ **(b) can have only certain unique values of energy.**
 - (c) can have no energy at all.
 - (d) is free to leave whenever it feels like it.
 - (e) sits directly on top of the atomic nucleus.