Announcements

- If you didn't bring your rainbow glasses, pick up a pair of "Rainbow glasses" from the front of the room!
- Toys 'n' Tea today at 4-5pm in Olin 251A. Fun and games with fire!

Physics & Astronomy Seminar

How did the Universe become transparent to light? And how do we study galaxies in this transparent Universe?

Margaret Ikape

University of Toronto

Olin 268. Friday, Mar. 28 at 12:00 pm

Pizza provided. Bring your own water bottle.

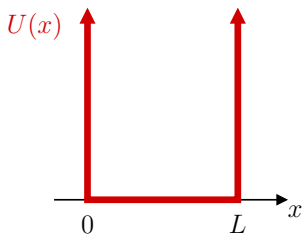
Lecture 16 — Concept Test 1

For an infinite square well of width L, which of the following could be an allowed wavenumber, k_n? Put up as many cards as are correct, and recall that $k = 2\pi/\lambda$ where λ is the wavelength.

1. $\dfrac{3\pi}{L}$
2. $\dfrac{2\pi}{L}$
3. $\dfrac{\pi}{L}$
4. $\dfrac{2\pi}{3L}$
5. $\dfrac{\pi}{2L}$
6. $\dfrac{\pi}{4L}$

Lecture 16 — Concept Test 2

For the $n = 3$ level of the infinite square well, at which of the following positions are you most likely to find the particle? *Hint:* draw ψ.



1. $L/6$

2. $L/3$

3. L

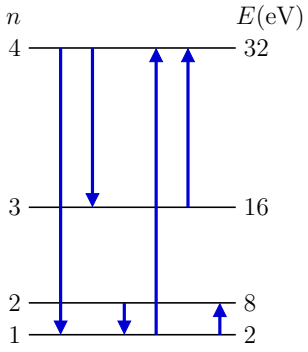
4. $L/4$

5. $L/2$

6. $2L$

Lecture 16 — Concept Test 3

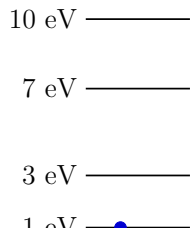
The following is a hypothetical energy level diagram showing the allowed energies for a particle confined in a 1-D potential well. For which of the labeled transitions will the wavelength of the emitted light be largest?



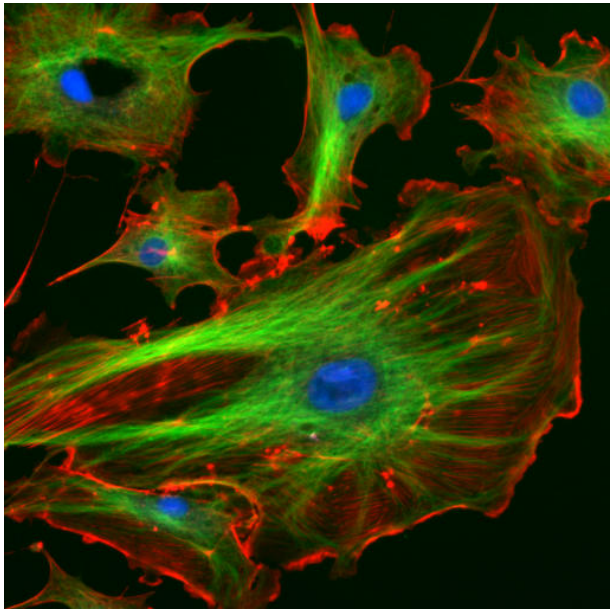
1. From 4 to 1
2. From 4 to 3
3. From 2 to 1
4. From 1 to 4
5. From 3 to 4
6. From 1 to 2

Lecture 16 — Concept Test 4

An electron in an atom starts out in the ground state, as shown in the energy level diagram. The electron absorbs a photon with energy 6 eV. What are all possible energies of photons that could then subsequently be emitted?



1. 2 eV, 4 eV, and 6 eV
2. 1 eV, 3 eV, and 7 eV
3. 4 eV and 6 eV
4. 1 eV and 3 eV
5. 3 eV and 10 eV
6. 3 eV and 4 eV



http://rsb.info.nih.gov/ij/images/