

NAN 242

Quiz 3 - Sample Questions

1. What type of a field would increase the speed of an electron (alternatively, how would you move a stationary electron)?
2. Which wire would have a higher resistance, a short and fat one or a thin and long one?
3. How would a magnetic field directed perpendicular to the direction of the motion of an electron affect its path?
4. Describe an electromagnetic wave in free space. Alternatively, what parameters would define a wave?
5. How would you label an electromagnetic wave with a wavelength of 620 nm. How about one with a frequency of 100 Mhz?
6. What is dispersion?
7. What is the relationship between the object and image distance in a lens?
8. Describe sunlight by its wavelength and polarization.
9. Describe thin film interference.
10. Sketch a spectrometer and its components.
11. What type of mirror coating would be more suitable for high power applications?
12. What type of lens would be used for focusing light?
13. If a 620 nm photon has an energy of 2 eV, what is the energy of a 1000 nm photon?
14. Describe the photoluminescence process.
15. What type information is gained from Raman spectroscopy? What would be an alternative method?
16. Which property of light is used in ellipsometry? What kind of information about the sample can be gained by it?
17. How does a photomultiplier tube work?