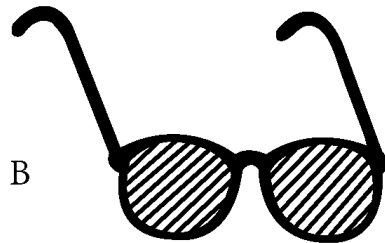
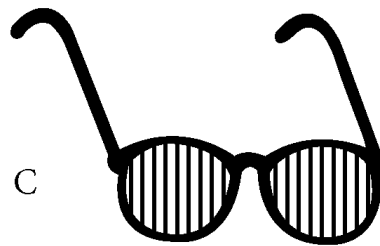
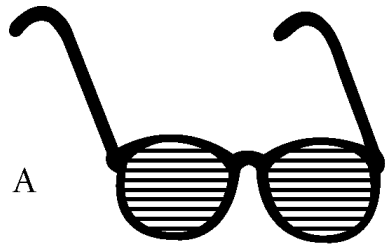


Electromagnetic Waves - Sample Test

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- Which portion of the electromagnetic spectrum is used in a microscope?
 - infrared waves
 - gamma rays
 - visible light
 - ultraviolet light
- What is the wavelength of microwaves of 3.0×10^9 Hz frequency?
 - 0.050 m
 - 0.060 m
 - 0.10 m
 - 0.20 m
- What is the frequency of an electromagnetic wave with a wavelength of 1.0×10^5 m?
 - 3.3×10^7 Hz
 - 3.0×10^8 Hz
 - 1.0×10^10 Hz
 - 3.0×10^{11} Hz
- In a vacuum, electromagnetic radiation of short wavelengths
 - travels as fast as radiation of long wavelengths.
 - travels slower than radiation of long wavelengths.
 - travels faster than radiation of long wavelengths.
 - can travel both faster and slower than radiation of long wavelengths.
- How does an electromagnetic wave propagate itself?
 - A changing magnetic field induces an electric field perpendicular to the magnetic field.
 - A changing electric field induces a magnetic field perpendicular to the electric field.
 - Changing electric and magnetic fields produce a transverse wave that is perpendicular to both of the oscillating fields.
 - all of the above
- If you know the wavelength of any form of electromagnetic radiation, you can determine its frequency because
 - all wavelengths travel at the same speed.
 - the speed of light varies for each form.
 - wavelength and frequency are equal.
 - the speed of light increases as wavelength increases.
- The farther light is from a source,
 - the more spread out light becomes.
 - the more condensed light becomes.
 - the more bright light becomes.
 - the more light is available per unit area.
- When red light and green light shine on the same place on a piece of white paper, the spot appears to be
 - yellow.
 - brown.
 - white.
 - black.
- Which of the following is *not* an additive primary color?
 - yellow
 - blue
 - red
 - green
- Which of the following is *not* a primary subtractive color?
 - yellow
 - cyan
 - magenta
 - blue
- Electromagnetic waves are ____ electric and magnetic fields.
 - transverse
 - constant
 - oscillating
 - parallel



12. Which pair of glasses shown above is best suited for automobile drivers? The transmission axes are shown by straight lines on the lenses. (Hint: The light reflects off the hood of the car.)
- a. A b. B c. C d. D

Short Answer

13. Which portion of the electromagnetic spectrum is used for aircraft navigation?
14. Why are some primary colors called additive?
15. What color results when yellow and blue pigment are combined?
16. What percentage of light passes through a polarizing filter when the transmission axis is perpendicular to the plane of polarization for light?