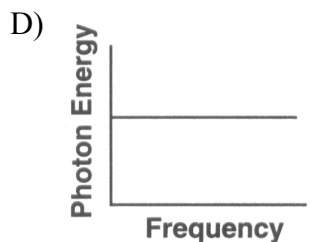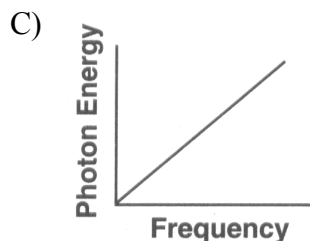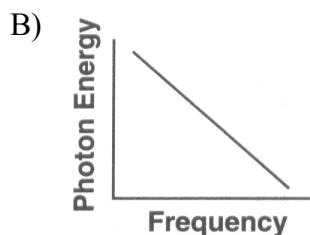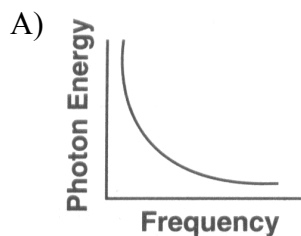1. A monochromatic beam of light has a frequency of 7.69×10^{14} hertz. What is the energy of a photon of this light?

   A) 2.59×10^{-40} J   B) 6.92×10^{-31} J
   C) 5.10×10^{-19} J   D) 3.90×10^{-7} J

2. Which graph best represents the relationship between photon energy and photon frequency?

   A)

   B)

   C)

   D)

3. A photon of light traveling through space with a wavelength of 6.0×10^{-7} meter has an energy of

   A) 4.0×10^{-40} J   B) 3.3×10^{-19} J
   C) 5.4×10^{10} J   D) 5.0×10^{14} J

4. The energy of a photon is inversely proportional to its

   A) wavelength   B) frequency
   C) speed   D) phase

5. A quantum of light energy is a

   A) photon   B) photoelectron
   C) lumen   D) spectra

6. Compared to a photon of red light, a photon of blue light has a

   A) greater energy   B) longer wavelength
   C) smaller momentum D) lower frequency

7. Electrons in excited hydrogen atoms are in the $n = 3$ energy level. How many different photon frequencies could be emitted as the atoms return to the ground state?

   A) 1   B) 2   C) 3   D) 4

8. In which part of the electromagnetic spectrum does a photon have the greatest energy?

   A) red   B) infrared
   C) violet   D) ultraviolet

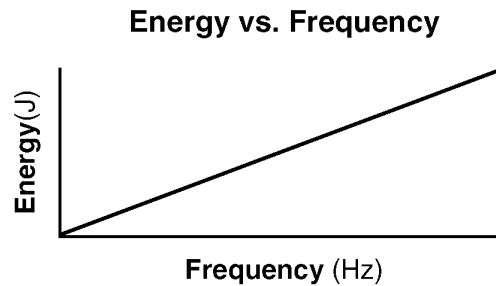9. Light of wavelength 5.0×10^{-7} meter consists of photons having an energy of

   A) 1.1×10^{-48} J   B) 1.3×10^{-27} J
   C) 4.0×10^{-19} J   D) 1.7×10^{-5} J

10. Base your answer to the following question on the data table and graph below. The data table lists the energy and corresponding frequency of five photons. The graph represents the relationship between the energy and the frequency of photons.

Photon	Energy (J)	Frequency (Hz)
A	6.63×10^{-15}	1.00×10^{19}
B	1.99×10^{-17}	3.00×10^{16}
C	3.49×10^{-19}	5.26×10^{14}
D	1.33×10^{-20}	2.00×10^{13}
E	6.63×10^{-26}	1.00×10^8

Energy vs. Frequency

The slope of the graph would be

A) 6.63×10^{-34} J•s

B) 6.67×10^{-11} N•m^2/kg^2

C) 1.60×10^{-19} J

D) 1.60×10^{-19} C