

KNOWLEDGE PROBE 2: INTRODUCTION TO WIRELESS TECHNOLOGY

Electromagnetic Spectrum

Learning Objectives

1. Explain the divisions of the electromagnetic spectrum.
 2. Match the electromagnetic spectrum to common applications.
 3. Identify the three main segments of the optical spectrum and applications.
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1. Who regulates the frequency spectrum in the United States?
 - a. Department of Commerce
 - b. Department of Defense
 - c. Federal Commerce Commission
 - d. Federal Communications Commission
 2. Radio waves extend between what to frequencies?
 - a. 300 kHz to GHz.
 - b. 30 kHz to 30 GHz
 - c. 30 kHz to 300 GHz
 - d. Anything above 30 kHz
 3. Shortwaves are defined as those signals with frequencies in the range
 - a. 300 kHz to 30 MHz
 - b. 3 to 30 MHz
 - c. 30 kHz to 300 MHz
 - d. Above 1 GHz
 4. Microwaves are considered to be those signals with frequencies in the range
 - a. 300 kHz to 30 MHz
 - b. 3 to 30 MHz
 - c. 30 kHz to 300 MHz
 - d. Above 1 GHz
 5. What is the frequency range for TV and FM radio?
 - a. MF
 - b. SHF
 - c. UHF
 - d. VHF
 6. What is the approximate wavelength of a signal with a frequency of 430 MHz?
 - a. 30 cm
 - b. 70 cm
 - c. 1.2 meters
 - d. 2 meters



7. What frequency corresponds to a wavelength of 30 meters?
 - a. 1 MHz
 - b. 10 MHz
 - c. 30 MHz
 - d. 150 MHz

8. What is another name for signals with frequencies above 30 GHz?
 - a. Light
 - b. Millimeter waves
 - c. Unbelievably high frequencies
 - d. Wireless

9. What wireless services mainly use frequencies above 10 GHz?
 - a. Aircraft radio
 - b. Broadcast radio
 - c. Satellites and radar
 - d. Wireless networks

10. Light is an electromagnetic wave.
 - a. True
 - b. False

11. Light frequencies are more commonly expressed in which wavelength units?
 - a. Angstroms
 - b. Feet
 - c. Nanometers
 - d. THz

12. Which type of light is use in wireless communications?
 - a. Visible
 - b. Infrared
 - c. Ultraviolet
 - d. That between 300 GHz and infrared.