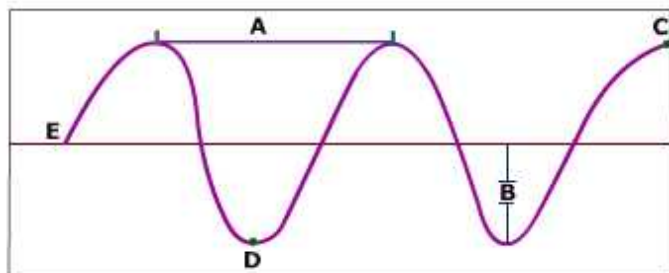
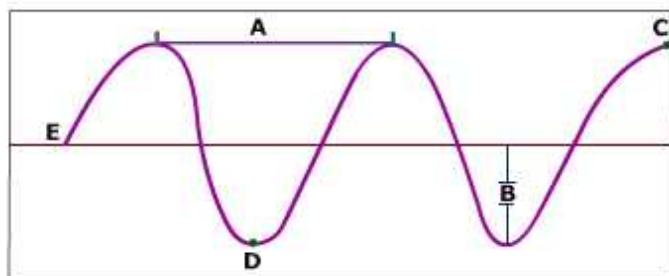


1. The wavelength is represented by which letter?

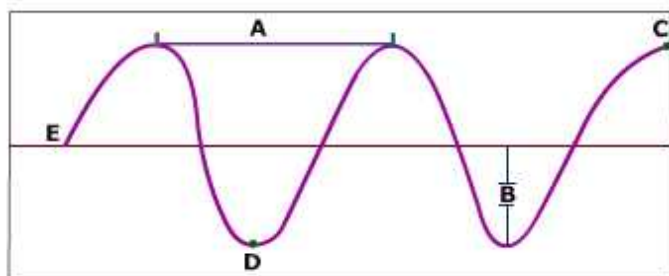


- A) A B) B C) C D) D E) E

2. The wave crest is represented by which letter?



- A) A B) B C) C D) D E) E



3. The wave trough is represented by which letter?

- A) A B) B C) C D) D E) E

4. What is it called when a certain number of waves pass a given point per a certain number of seconds?

- A) Frequency B) Wavelength
C) Amplitude D) Origin

5. Which of the following forms of electromagnetic energy has a longer wavelength than infrared waves?

- A) Microwaves B) Ultraviolet waves
C) X rays D) Visible light

6. Which of the following forms of electromagnetic energy has a higher frequency than ultraviolet waves?

- A) X rays B) Microwaves
C) Visible light D) Infrared waves

7. Which of the following forms of electromagnetic energy has the longest wavelength?

- A) Radio waves B) Infrared waves
C) Microwaves D) Visible light

8. Which of the following forms of electromagnetic energy has the highest frequency?

- A) Infrared waves B) X rays
C) Gamma rays D) Ultraviolet waves

9. Compared to the other forms of electromagnetic radiation, radio waves

- A) have the lowest energy and highest frequency.
B) have the highest energy and highest frequency.
C) have the lowest energy and lowest frequency.
D) have the highest energy and lowest frequency.

10. Infrared radiation is also known as

- A) radar
B) heat radiation
C) magnetic resonance waves
D) radio signals

11. Which of the following forms of electromagnetic radiation are dangerous to humans, but also enables your body to make a particular vitamin?

- A) Infrared rays B) Gamma rays
C) Ultraviolet waves D) X rays

12. What is the frequency of a wave that has a speed of 0.4 m/s and a wavelength of 0.020 meter?

- A) 10 hertz B) 20 hertz
C) 0.008 hertz D) 0.5 hertz

13. What is the frequency of a wave that has a speed of 365 m/s and a wavelength of 1.70 m?

- A) 310 Hz B) 215 Hz
C) 429 Hz D) 621 Hz

14. Convert 300.nm to meters

- A) 3.0×10^7 B) 3.0×10^{-7}
C) 3.0×10^{-3} D) 3.0×10^3

-
15. What is the wavelength of microwaves with a frequency of 3.0×10^9 Hz?
- A) 0.060m B) 0.050m
C) 0.10m D) 0.20m
16. Yellow-green light has wavelength of 5.6×10^{-7} meters. What is its frequency?
- A) 5.4×10^6 Hz B) 1.8×10^{14} Hz
C) 1.8×10^6 Hz D) 5.4×10^{14} Hz
17. Calculate the frequency of visible light having a wavelength of 486.1 nm (4.861×10^{-7} m).
- A) 2.06×10^{14} Hz B) 2.06×10^6 Hz
C) 6.17×10^{14} Hz D) 1.20×10^{-15} Hz
E) 4.86×10^{-7} Hz
18. What is the wavelength of radiation that has a frequency of $2.10 \times 10^{14} \text{ s}^{-1}$?
- A) 6.30×10^{22} m B) 7.00×10^2 nm
C) 7.00×10^5 m D) 1.43×10^{-6} m
E) 3.00×10^8 m
19. Electromagnetic radiation with a wavelength of 525 nm (5.25×10^{-7} m) appears as green light to the human eye. The energy of one photon of this light is _____ J.
- A) 1.04×10^{-31} J B) 3.78×10^{-19} J
C) 2.64×10^{18} J D) 3.78×10^{-28} J
E) 1.04×10^{-22} J
20. What is the energy **per mole** of photons associated with visible light of wavelength 486.1 nm (4.861×10^{-7} m)?
- A) 6.46×10^{-16} J B) 6.46×10^{-25} J
C) 2.46×10^{-4} J D) 12.4 kJ
E) 246 kJ
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