

Use the word bank on the next page to fill in the missing word(s) in each statement.

1. Electromagnetic waves are _____ waves.
2. Einstein used the word photon to describe _____ of light.
3. Thomas Young showed that light travels as _____ with his double slit experiment.
4. Infrared radiation transmits _____ energy.
5. Radar, microwaves, broadcast television, and AM are all _____ waves.
6. Intensity is the term used to describe the rate at which a wave's _____ flows through an area.
7. Herschel showed that there is _____ radiation beyond the red end of the visible spectrum.
8. Because blue light has a _____ frequency than red light, its photons have more energy.
9. Electromagnetic radiation travels fastest through a _____ but only slightly slower through air.
10. A strong magnet moved through a loop of wire will produce a _____ in the wires.
11. Einstein explained the _____ by describing light as a stream of particles.
12. Because AM radio has a _____ frequency than FM radio, AM radio waves have a _____ wavelength.
13. The speed of _____ in a vacuum is 3.0×10^8 m/s.
14. The different types of electromagnetic waves travel at the same speed in a vacuum but they differ in _____ and _____.
15. In FM radio, the frequency of the signal is changed and in AM radio, the _____ of the signal is changed.
16. Though it is something we usually try to avoid, one use of _____ radiation is to kill bacteria in food and water.
17. When you pass an electrical current through a loop of wires, you get a _____ field around the wires.

18. Since the speed of electromagnetic waves is the same, as the frequency increases the wavelengths become _____.

19. Electromagnetic waves do not require a _____ because the magnetic and electric fields, which are at right angles to each other, push each other along.

20. Electromagnetic waves are produced when an electric charge _____.

Word Bank

Radio	vacuum	current	heat	photoelectric effect
Invisible	transverse	light	longer	wavelength
Shorter	waves	lower	magnetic	frequency
Medium	vibrates	energy	higher	ultraviolet
Amplitude	particles			

Short Answer: Answer the following questions in the space provided.

21. The word RADAR is an acronym for what? _____

22. List the types of electromagnetic waves in order from shortest to longest wavelength.

- | | |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

23. List the colors of the visible spectrum in order from lowest frequency to highest frequency.

- | | |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

24. Explain how a radar gun uses the Doppler effect to determine the speed of a moving car.

25. List the types of electromagnetic waves in order from lowest to highest frequency.

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|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |