

- ____ 21. Electromagnetic waves can transfer energy without a(n)
 a. electric field. c. change in either a magnetic field or an electric field.
 b. magnetic field. d. medium.
- ____ 22. Which electromagnetic waves have the longest wavelengths and lowest frequencies?
 a. gamma rays c. radio waves
 b. infrared waves d. ultraviolet rays
- ____ 23. Strawberries reflect light waves of which of the following wavelengths?
 a. purple wavelengths c. yellow wavelengths
 b. blue wavelengths d. red wavelengths
- ____ 24. Which type of scanner is used for airport security and is shown in the diagram?



- a. gamma ray scanner c. ultraviolet ray scanner
 b. X-ray scanner d. fluorescent scanner
- ____ 25. If light waves change speed when they pass from one medium into another, the light will be _____.
 a. separated c. reflected
 b. diffracted d. refracted
- ____ 26. Which light wave has the shortest wavelength and the highest frequency?
 a. red c. violet
 b. blue d. yellow
- ____ 27. Which action must occur first in the process of producing an electromagnetic wave?
 a. the magnetic field changes c. a charged particle vibrates
 b. the field around a charged particle vibrates d. the electric field changes
- ____ 28. The number of cycles or waves passing a particular point every second is the _____.
 a. frequency c. wavelength
 b. pitch d. amplitude
- ____ 29. When your mother tells you to turn down the radio, she is asking you to _____.
 a. lower the amplitude of the sound wave c. lower the frequency of the sound wave
 b. raise the frequency of the sound wave d. raise the amplitude of the sound wave
- ____ 30. Which of the following media can sound NOT travel through?
 a. empty space c. air
 b. metal d. water