Light

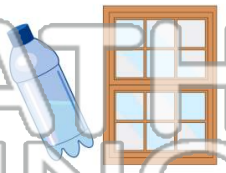
Name_____ Class_____ Date_____

1 In a **vacuum**, light with a **frequency** of 5.0×10^{14} hertz has a **wavelength** of

A 6.0×10^{-21} m
B 6.0×10^{7} m
C 1.7×10^{6} m
D 1.5×10^{23} m

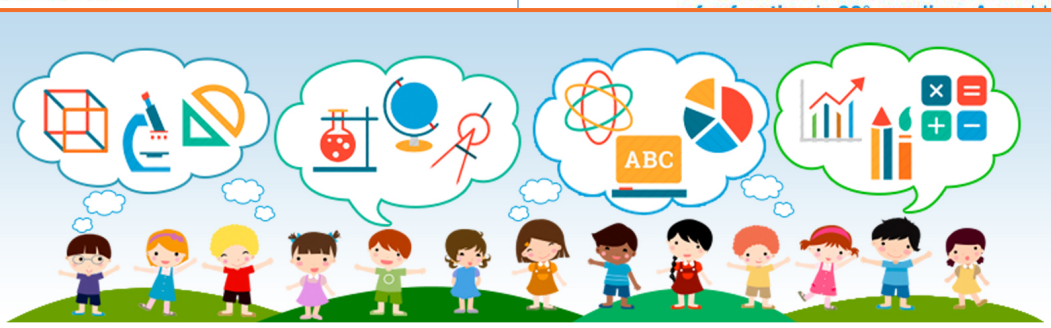
2 A beam of monochromatic light travels through flint glass, crown glass, Lucite, and water. The **speed** of the light beam is **slowest** in

A flint glass
B crown glass
C Lucite
D water



3 Which characteristic of **electromagnetic radiation** is **directly proportional** to the **energy** of a photon?

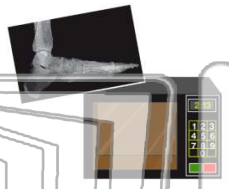
4 A monochromatic ray of light (f=5.09×10^{14} hertz) traveling in air is incident upon medium A at an angle of 45°. If the **angle**



5

7

A ultraviolet
B x-ray
C infrared
D microwave



its speed in air. The **absolute index of refraction** of the material is approximately

A 0.75
B 1.3
C 2.3
D 4.0

9 Waves pass through a 10-centimeter opening in a barrier **without** being diffracted. This observation provides evidence that the **wavelength** of the waves is

A much shorter than 10 cm
B equal to 10 cm
C longer than 10 cm, but shorter than 20 cm
D longer than 20 cm

10 White light is passed through a cloud of cool hydrogen gas and then examined with a **spectroscope**. The **dark lines observed on a bright background** are caused by

A the hydrogen emitting all frequencies in white light
B the hydrogen absorbing certain frequencies of the white light
C diffraction of the white light
D constructive interference

Light

Phys Sci

Name_____ Class_____ Date_____

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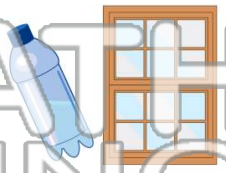

A

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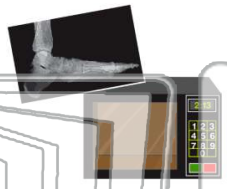

B

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B

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