

Light and Optical Systems

Topic 8 - Beyond Light Practice Quiz

1. The different between water waves and light waves is that, rather than water particles moving up and down (as they do in water waves) these vibrate ...

the different colors of light

electrical and magnetic fields

wavelengths and frequencies

particles in the magnetic spectrum

2. The frequency of different colors of light waves is often given in scientific notation. The frequency of orange light is 500,000,000,000,000 Hz. This is can be represented, using scientific notation, as ...

5.0×10^{14}

5.0×10^{13}

500.0×10^{12}

5000.0×10^{11}

3. Infrared radiation is heat radiation. This type of radiation can have a useful application. They are used in ...

computers to keep the chips warm

restaurants to keep food warm

refrigerators to trap the heat

microwaves to cook the food

4. There are many different types of radio waves. A transmitting station can send these types of signals to an orbiting satellite, which will amplify them and send them back to a receiving station on the Earth. The type of signal used in satellite communications is ...

AM Radio

FM Radio

Microwave

Shortwave

5. UV radiation is a very energetic type of radiation, which causes tanning. To avoid a sunburn, a special blocking agent - sunscreen - is added to the lotion we use. This blocking agent reflects the UV rays and can help prevent cancerous growths on the skin. The strength of this blocking agent is determined by the ...

SDF

SPF

SVF

SBF

**Check your
Answers**

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1. The different between water waves and light waves is that, rather than water particles moving up and down (as they do in water waves) these vibrate ...

the different colors of light

particles in the magnetic spectrum

wavelengths and frequencies

electrical and magnetic fields (Text p. 249) In light waves, electrical and magnetic fields vibrate

2. The frequency of different colors of light waves is often given in scientific notation. The frequency of orange light is 500,000,000,000,000 Hz. This is can be represented, using scientific notation, as ...

5.0×10^{14} (Text p. 249) **Math Connect and the Table of wavelength and frequencies**

5.0×10^{13}

500.0×10^{12}

5000.0×10^{11}

3. Infrared radiation is heat radiation. This type of radiation can have a useful application. It is used used in ...

computers to keep the chips warm

restaurants to keep food warm (Text p. 250) Once the food is cooked, it is placed under a heat lamp (infrared lamp) to keep it warm, until it is served

refrigerators to trap the heat

microwaves to cook the food

4. There are many different types of radio waves. A transmitting station can send these types of signals to an orbiting satellite, which will amplify them and send them back to a receiving station on the Earth. The type of signal used in satellite communications is ...

AM Radio

FM Radio

Microwave (Text p. 251) Figure 3.64

Shortwave

5. UV radiation is a very energetic type of radiation, which causes tanning. To avoid a sunburn, a special blocking agent - sunscreen - is added to the lotion we use. This blocking agent reflects the UV rays and can help prevent cancerous growths on the skin. The strength of this blocking agent is determined by the ...

SDF

SPF (Text p. 260) Testing SPF (Sun Protection Factor)

SVF

SBF