

WJEC England GCSE Physics

6.2 - Interactions of Electromagnetic Radiation with Matter

Flashcards

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What type of waves can be produced by oscillations in an electrical circuit?
(Higher)



What type of waves can be produced by oscillations in an electrical circuit? (Higher)

Radio waves.



How can radio waves create an alternating current in a circuit? (Higher)



How can radio waves create an alternating current in a circuit? (Higher)

When radio waves are absorbed, they can induce oscillations in a circuit with the same frequency as the waves themselves.



Where do gamma rays originate from?



Where do gamma rays originate from?

They originate from changes in the nuclei of atoms.



What are the effects of body cells absorbing radiation?



What are the effects of body cells absorbing radiation?

Large amounts can damage cells.

Smaller amounts cause mutation, causing cells to divide rapidly, which can lead to **cancer**.



What health effects can ultraviolet waves cause?



What health effects can ultraviolet waves cause?

- They can cause premature ageing of skin.
 - They can increase the risk of developing skin cancer.



What health effects can X-rays and Gamma rays cause?



What health effects can X-rays and Gamma rays cause?

- They are ionising radiation so can cause mutations in genes.
- They can lead to increased risk of developing various cancers.



Give three practical uses for infrared radiation.



Give three practical uses for infrared radiation.

1. Electrical heaters
2. Cooking food
3. Infrared cameras



Give two practical uses for microwave radiation.



Give two practical uses for microwave radiation.

1. Satellite communications
2. Cooking food



Give two practical uses for radio waves.



Give two practical uses for radio waves.

1. Television transmission
2. Radio transmission



State and explain uses for UV radiation.



State and explain uses for UV radiation.

- Sterilisation since it can kill bacteria.
- Energy efficient lamps since it radiates very little heat.
 - Artificial sun tanning.



State and explain a use for X-rays.



State and explain a use for X-rays.

Medical imaging and treatment, since they are very high energy and can easily penetrate body tissues.



State a use for gamma rays.



State a use for gamma rays.

Gamma rays are used in medical treatments, such as radiotherapy for the treatment of cancer.



What property of waves is responsible for refraction?



What property of waves is responsible for refraction?

- Wave speed.
- Waves undergo refraction when their speed changes in a new medium.
- The change of speed causes a change in direction.

