

Name:

Date:

EXTENSION QUESTIONS

QUICK RECAP:

Answer the following questions:

1

Why can bees see ultraviolet light but humans cannot?



2

In what ways do we use different parts of the electromagnetic spectrum in everyday life? Give at least 3 examples.



3

How does the energy of electromagnetic radiation affect its ability to damage living tissue?

4

Why are X-rays used in hospitals but not visible light?

5

Why do astronauts wear special suits to protect against ultraviolet and other types of radiation?



6

How does the use of infrared cameras help firefighters in a smoke-filled building?

7

Why are radio waves suitable for communication over long distances?

EXTENSION QUESTIONS

QUICK RECAP:

Answer the following questions:

- 1 Why can bees see ultraviolet light but humans cannot?

Answer: Bees have photoreceptor cells in their eyes that can detect UV wavelengths, which are outside the visible range for humans.



- 2 In what ways do we use different parts of the electromagnetic spectrum in everyday life? Give at least 3 examples.

- Microwaves for cooking (microwave ovens)
- Infrared for remote controls and thermal imaging
- X-rays for medical imaging



- 3 How does the energy of electromagnetic radiation affect its ability to damage living tissue?

Answer: Higher energy radiation like X-rays and gamma rays can ionize atoms and damage cells or DNA, potentially causing cancer. Lower energy radiation like radio waves does not have enough energy to damage tissue in this way.

- 4 Why are X-rays used in hospitals but not visible light?

Answer: X-rays can pass through soft tissue but are absorbed by denser materials like bones, allowing doctors to see inside the body. Visible light cannot penetrate the skin.

- 5 Why do astronauts wear special suits to protect against ultraviolet and other types of radiation?

Answer: In space, there is no atmosphere to block harmful high-energy radiation like ultraviolet rays and cosmic rays, which can damage cells and cause illness.



- 6 How does the use of infrared cameras help firefighters in a smoke-filled building?

Answer: Infrared cameras detect heat, allowing firefighters to see through smoke and find people or hot spots that are invisible to the naked eye.

- 7 Why are radio waves suitable for communication over long distances?

Answer: Radio waves have low energy and long wavelengths, allowing them to travel long distances and diffract around obstacles like buildings and mountains.