

Brett Robbins Academic Consulting

Physics 30 Practice Test

Unit C: Electromagnetic Radiation

5 Questions

Original practice questions written to the Alberta curriculum, in the style of past diploma examinations. Work through each question, then check your answers with the key at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.

Question 1

A weather radar system emits electromagnetic radiation with a wavelength of 2.0 cm.

This radiation is classified as

- | | |
|---------------|--------------------------|
| A) gamma rays | B) ultraviolet radiation |
| C) microwaves | D) infrared radiation |

Question 2

An electromagnetic wave has a frequency of 6.0×10^{14} Hz.

Its wavelength in a vacuum is

- | | |
|---------------------------|---------------------------|
| A) 5.0×10^{-7} m | B) 2.0×10^6 m |
| C) 5.0×10^{-9} m | D) 1.8×10^{23} m |

Question 3

The energy of a photon that has a frequency of 8.6×10^{14} Hz is

(Use $h = 6.63 \times 10^{-34}$ J · s.)

- | | |
|-----------------------------|-----------------------------|
| A) 7.71×10^{-49} J | B) 5.70×10^{-19} J |
| C) 5.70×10^{-20} J | D) 1.16×10^{-18} J |

Question 4

When a beam of light passes from air into glass, one property of the light does not change.

That property is its

- A) speed
- B) wavelength
- C) frequency
- D) direction of travel

Question 5

A metal surface is illuminated by monochromatic light with a frequency above the threshold frequency.

If the intensity of the light is increased while its frequency is kept constant, then

- A) the maximum kinetic energy of the photoelectrons increases
- B) the number of photoelectrons emitted per second increases
- C) the stopping voltage increases
- D) the threshold frequency of the metal decreases

Answer Key

- | | | |
|------|------|------|
| 1. C | 3. B | 5. B |
| 2. A | 4. C | |

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