ALBERTA SCIENCE 30 · UNIT C · 10 QUESTIONS

Electromagnetic Energy — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **A resistor has a voltage of 9.0 V across it, and a current of 3.0 A passes through it. The resistance of the resistor is**

- A 27 Ω
- B 3.0 Ω
- C 0.33 Ω
- D 12 Ω

Understand It with Pulse | Flag a mistake

2 **The rate at which a device converts electrical energy, its power, is measured in**

A volts

B amperes

C joules

D watts

Understand It with Pulse | Flag a mistake

3 **Which type of electromagnetic radiation, delivered in controlled doses, is used in radiation therapy to destroy cancer cells?**

A Gamma rays

B Radio waves

C Infrared radiation

D Microwaves

Understand It with Pulse | Flag a mistake

4 **A ray of light passes from glass into air at an angle. Because the light speeds up in the air, the ray bends**

- A along the normal
- B toward the normal
- C away from the normal
- D back on itself

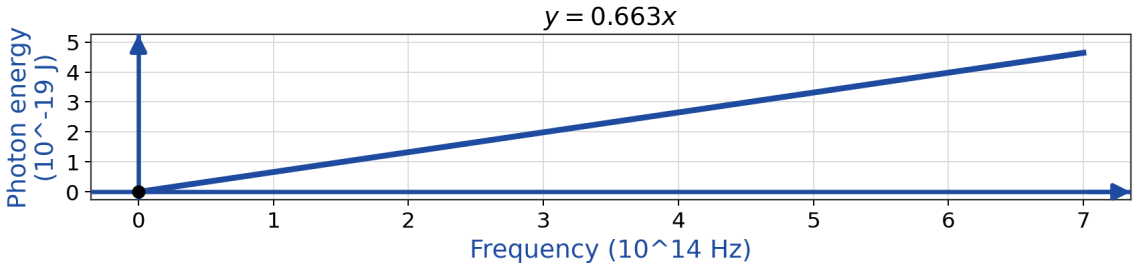
Understand It with Pulse | Flag a mistake

5 **A 100.0 W light bulb is left on for 24 h. If electricity costs 0.15 dollars per kWh, the cost of the energy used, in dollars, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **The graph below shows photon energy against frequency. When the frequency doubles from 2.00 to 4.00, in units of 10^{14} Hz, the photon energy**



A doubles

B is halved

C quadruples

D remains the same

Understand It with Pulse | Flag a mistake

7 **Cellular telephones send and receive signals using**

- **A** fibre-optic cables
- **B** X-ray imaging
- **C** radio waves
- **D** ultraviolet lamps

Understand It with Pulse | Flag a mistake

8 **Sunlight travels the 1.50×10^{11} m from the Sun to Earth. The time it takes, in units of 10^{2} s to the nearest hundredth, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **Two identical bulbs are connected in series with a battery. A third identical bulb is then added in series. The bulbs will**

- **A** become brighter
- **B** stay the same brightness
- **C** burn out immediately
- **D** become dimmer

Understand It with Pulse | Flag a mistake

10 **A photon has a frequency of 4.00×10^{14} Hz. Using $h = 6.63 \times 10^{-34}$ J · s, the energy of the photon, in units of 10^{-19} J to the nearest hundredth, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. B
2. D
3. A
4. C
5. 0.36
6. A
7. C
8. 5
9. D
10. 2.65

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