ALASKA PHYSICS · UNIT 4 · 5 QUESTIONS

Light and Modern Physics — Practice Test

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1

A ray of light hits a mirror at an angle of incidence of 50 degrees. What is the angle between the incoming ray and the reflected ray?

- A 50 degrees
- B 100 degrees
- C 0 degrees
- D 40 degrees

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2 **Light travels at 3.0×10^8 m/s in a vacuum. In a material with refractive index 1.25, its speed is**

- **A** 2.4×10^8 m/s
- **B** 1.25×10^8 m/s
- **C** 3.0×10^8 m/s
- **D** 3.75×10^8 m/s

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3 **Use $h = 6.63 \times 10^{-34}$ J s. A photon has frequency 4×10^{14} Hz. Its energy is closest to**

- **A** 2.65×10^{-19} J
- **B** 6.63×10^{-19} J
- **C** 0.60×10^{-19} J
- **D** 1.66×10^{-19} J

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4 **A photon of energy 5.0 eV hits a metal with work function 3.0 eV. The maximum kinetic energy of an emitted electron is**

- A 15 eV
- B 8.0 eV
- C 1.67 eV
- D 2.0 eV

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5 **In hydrogen, the energy of level n is $-13.6/n^2$ eV. The energy of level 3 is closest to**

- A -13.6 eV
- B -40.8 eV
- C -4.53 eV
- D -1.51 eV

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ANSWER KEY

1. A
2. A
3. A
4. D
5. D

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