SOUTH CAROLINA PHYSICS · UNIT 4

# Light and Modern Physics — Practice Test

**South Carolina Physics • 10 questions**

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** **Use $h = 6.63 \times 10^{-34}$ J s. A photon of frequency $1.0 \times 10^{14}$ Hz has energy about**

- **A** $6.63 \times 10^{-20}$ J
- **B** $6.63 \times 10^{-48}$ J
- **C** $6.63 \times 10^{-34}$ J
- **D** $1.51 \times 10^{20}$ J

Understand It with Pulse | Flag a mistake

**2** **An object 5 cm tall is magnified by 4. Its image height, in centimeters, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **Light of wavelength 450 nm in air enters glass of refractive index 1.5. Its wavelength in glass, in nanometers, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A sample starts with 48 g of a radioactive isotope. After two half lives, the mass remaining, in grams, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **Total internal reflection can occur only when light travels from a medium of**

A lower to higher refractive index

B higher to lower refractive index

C equal refractive index

D zero refractive index

Understand It with Pulse | Flag a mistake

6 **The color of light with the longest wavelength in the visible spectrum is**

A violet

B blue

C green

D red

Understand It with Pulse | Flag a mistake

7 **The energy of a photon increases when its**

A frequency increases

B wavelength increases

C speed decreases

D amplitude decreases

Understand It with Pulse | Flag a mistake

8 **A ray hits a mirror at incidence angle 25 degrees. The reflection angle, in degrees, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **Nuclear power plants in common use get energy mainly from**

A fusion

B photoelectric emission

C refraction

D fission

Understand It with Pulse | Flag a mistake

10 **An electron in an atom absorbs a photon and moves to a**

A lower energy level

B nucleus

C different element

D higher energy level

Understand It with Pulse | Flag a mistake

## ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | A | **5.** | B | **9.** | D |
| **2.** | 20 | **6.** | D | **10.** | D |
| **3.** | 300 | **7.** | A | | |
| **4.** | 12 | **8.** | 25 | | |

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