DELAWARE PHYSICS · UNIT 4 · 25 QUESTIONS

Light and Modern Physics — 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 **Which term is defined as follows: a particle of light energy?**

- A photon
- B photoelectric effect
- C wave particle duality
- D quantum

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2 **Which of the following is an example of photon?**

- A light knocking electrons from a surface
- B a single packet of light
- C electrons diffracting like waves
- D one photon of light

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3 **Which statement best describes photon?**

A the photoelectric effect supports the photon model

B duality means behavior depends on the experiment

C photons carry energy proportional to frequency

D quantum theory describes energy in discrete amounts

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4 **Which term is defined as follows: electrons ejected from a metal by light?**

A photon

B photoelectric effect

C wave particle duality

D quantum

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5 **Which of the following is an example of photoelectric effect?**

A a single packet of light

B electrons diffracting like waves

C light knocking electrons from a surface

D one photon of light

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6 **Which statement best describes photoelectric effect?**

A photons carry energy proportional to frequency

B duality means behavior depends on the experiment

C quantum theory describes energy in discrete amounts

D the photoelectric effect supports the photon model

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7 **Which term is defined as follows: the idea that matter and light show both wave and particle behavior?**

A photon

B photoelectric effect

C wave particle duality

D quantum

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8 **Which of the following is an example of wave particle duality?**

A a single packet of light

B light knocking electrons from a surface

C one photon of light

D electrons diffracting like waves

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9 **Which statement best describes wave particle duality?**

- A duality means behavior depends on the experiment
- B photons carry energy proportional to frequency
- C the photoelectric effect supports the photon model
- D quantum theory describes energy in discrete amounts

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10 **Which term is defined as follows: a discrete packet of energy?**

- A photon
- B photoelectric effect
- C wave particle duality
- D quantum

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11 **Which of the following is an example of quantum?**

- A one photon of light
- B a single packet of light
- C light knocking electrons from a surface
- D electrons diffracting like waves

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12 **Which statement best describes quantum?**

- A photons carry energy proportional to frequency
- B quantum theory describes energy in discrete amounts
- C the photoelectric effect supports the photon model
- D duality means behavior depends on the experiment

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13 **Which term is defined as follows: a heavy nucleus splitting into smaller nuclei?**

A nuclear fission

B photon

C photoelectric effect

D wave particle duality

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14 **Which of the following is an example of nuclear fission?**

A a single packet of light

B uranium splitting after absorbing a neutron

C light knocking electrons from a surface

D electrons diffracting like waves

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15 **Which statement best describes nuclear fission?**

- A photons carry energy proportional to frequency
- B the photoelectric effect supports the photon model
- C fission releases a large amount of energy
- D duality means behavior depends on the experiment

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16 **Which term is defined as follows: light nuclei joining into a heavier nucleus?**

- A photon
- B nuclear fusion
- C photoelectric effect
- D wave particle duality

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17 **Which of the following is an example of nuclear fusion?**

A a single packet of light

B light knocking electrons from a surface

C hydrogen joining in the Sun

D electrons diffracting like waves

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18 **Which statement best describes nuclear fusion?**

A photons carry energy proportional to frequency

B the photoelectric effect supports the photon model

C duality means behavior depends on the experiment

D fusion powers stars

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19 **Which term is defined as follows: the time for half of a radioactive sample to decay?**

A photon

B photoelectric effect

C half life

D wave particle duality

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20 **Which of the following is an example of half life?**

A a single packet of light

B light knocking electrons from a surface

C electrons diffracting like waves

D ten days for half a sample to decay

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21 **Which statement best describes half life?**

A half life is constant for a given isotope

B photons carry energy proportional to frequency

C the photoelectric effect supports the photon model

D duality means behavior depends on the experiment

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22 **Which term is defined as follows: spontaneous decay of unstable nuclei?**

A photon

B photoelectric effect

C wave particle duality

D radioactivity

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23 **Which of the following is an example of radioactivity?**

- A a sample emitting radiation
- B a single packet of light
- C light knocking electrons from a surface
- D electrons diffracting like waves

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24 **Which statement best describes radioactivity?**

- A photons carry energy proportional to frequency
- B radioactivity is a nuclear, not chemical, process
- C the photoelectric effect supports the photon model
- D duality means behavior depends on the experiment

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25 **Which term is defined as follows: the theory linking space, time, and motion at high speeds?**

A relativity

B photon

C photoelectric effect

D wave particle duality

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ANSWER KEY

1. A
2. B
3. C
4. B
5. C
6. D
7. C
8. D
9. A
10. D
11. A
12. B
13. A
14. B
15. C
16. B
17. C
18. D
19. C
20. D
21. A
22. D
23. A
24. B
25. A

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