SASKATCHEWAN PHYSICS 30 · UNIT A · 25 QUESTIONS

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 **A particle of light carrying energy is called**

- A photon
- B wave particle duality
- C quantum
- D half life

Understand It with Pulse | Flag a mistake

2 **The photoelectric effect shows light behaves as**

- A only waves
- B particles
- C only sound
- D only heat

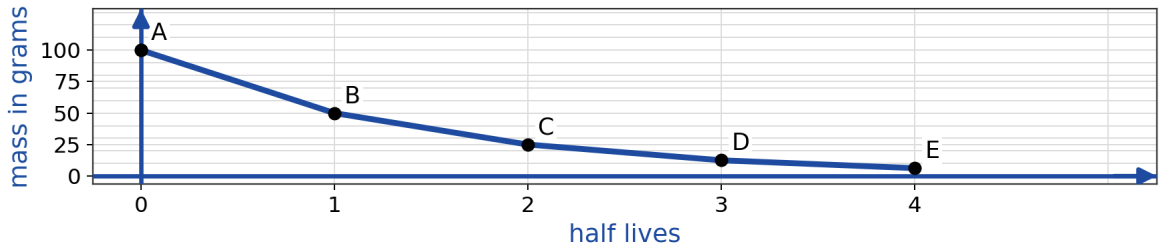
Understand It with Pulse | Flag a mistake

3 **A sample starts at 100 g. After 1 half life, the mass remaining, in grams, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **The graph shows mass remaining over half lives. The mass after 2 half lives, in grams, is _____**



ANSWER _____

Understand It with Pulse | Flag a mistake

5 **Ejection of electrons from a metal by light is called**

A quantum

B half life

C photoelectric effect

D radioactivity

Understand It with Pulse | Flag a mistake

6 **Increasing light intensity in the photoelectric effect increases the**

A energy of each electron only

B wavelength

C mass of electrons

D number of electrons ejected

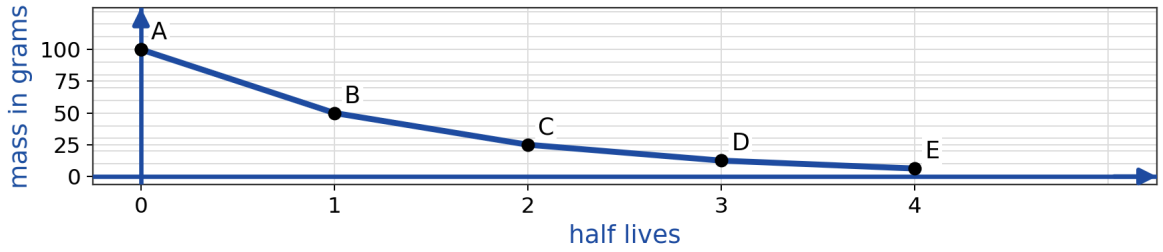
Understand It with Pulse | Flag a mistake

7 **A sample starts at 100 g. After 2 half lives, the mass remaining, in grams, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **The graph shows radioactive decay. The mass decreases**



A by half each half life

B by the same amount each time

C to zero at once

D by doubling

Understand It with Pulse

Flag a mistake

9 **An electron can produce an interference pattern like a wave, and it can also be detected as a single particle. This property of matter is called**

A half life, the time for half of a sample to decay away entirely

B wave particle duality

C radioactivity

D fusion

Understand It with Pulse | Flag a mistake

10 **Increasing light frequency above the threshold increases the**

A number of photons only

B metal temperature only

C energy of ejected electrons

D electron mass

Understand It with Pulse | Flag a mistake

11 **A sample starts at 80 g. After 2 half lives, the mass remaining, in grams, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **A discrete packet of energy is called**

A radioactivity

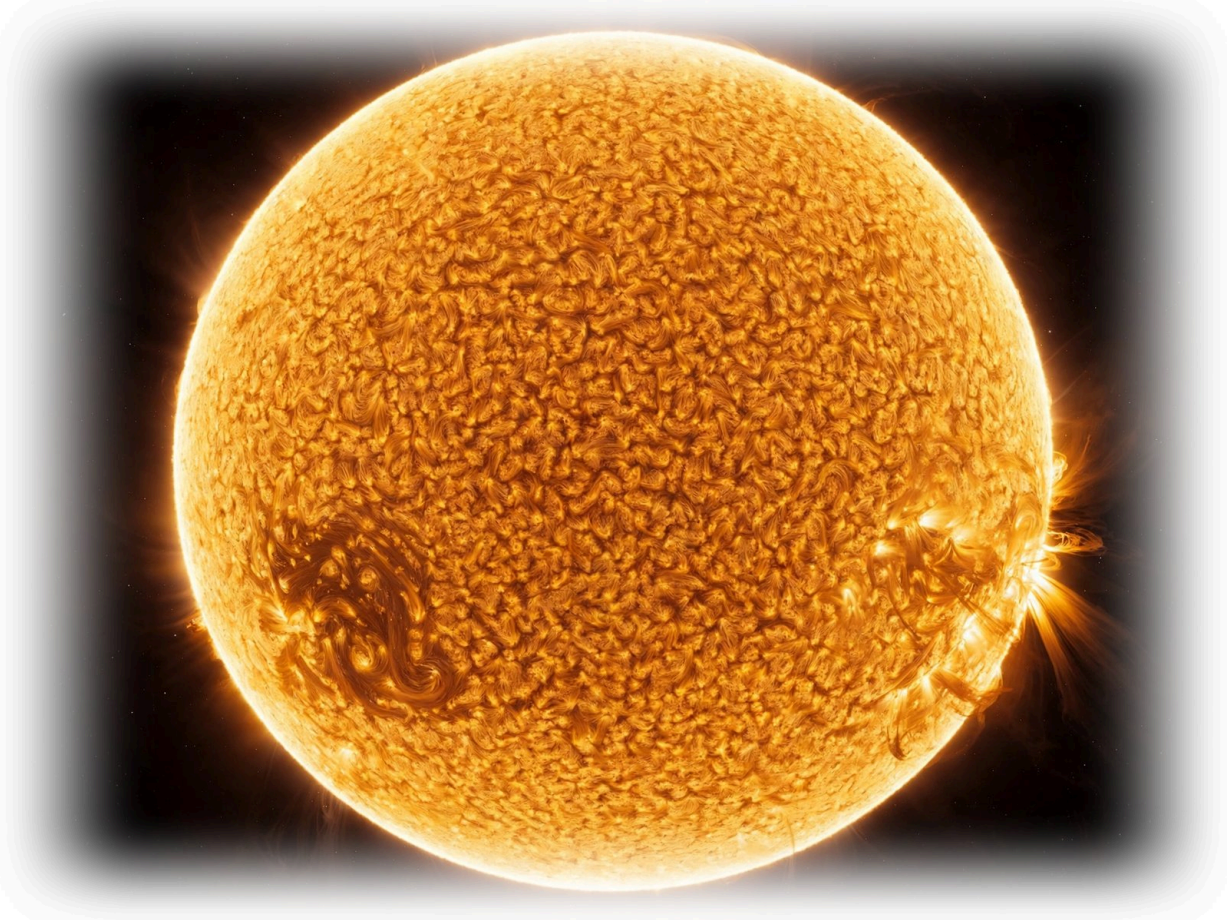
B fusion

C fission

D quantum

Understand It with Pulse | Flag a mistake

13 **Nuclear fusion in the Sun joins**



A hydrogen nuclei

B iron nuclei

C carbon nuclei only

D oxygen nuclei only

Understand It with Pulse | Flag a mistake

14 **A photon has frequency 5×10^{14} hertz. Using Planck constant 6.63×10^{-34} joule seconds, its energy, in units of 10^{-19} joules, is about**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **The time for half of a radioactive sample to decay is called**

A fusion

B half life

C fission

D relativity

Understand It with Pulse | Flag a mistake

16 **Half life means after one half life, the amount remaining is**

A zero

B double, because the amount grows larger as time passes

C half the original

D unchanged

Understand It with Pulse | Flag a mistake

17 **The photoelectric effect shows that light behaves as**

A a wave only, with no particles involved in the effect at all

B a stream of particles called photons

C a sound wave

D a magnetic field only

Understand It with Pulse | Flag a mistake

18 **Spontaneous decay of unstable nuclei is called**

A fission

B relativity

C energy level

D radioactivity

Understand It with Pulse | Flag a mistake

19 **Relativity predicts a fast-moving clock runs**

A slower than a stationary clock

B faster

C at the same rate always

D backwards

Understand It with Pulse | Flag a mistake

20 **According to relativity, time passes more slowly for an object that is**

- A moving very fast relative to an observer
- B at rest, with no motion at all relative to anyone watching from anywhere
- C very cold
- D very small

Understand It with Pulse | Flag a mistake

21 **Joining of light nuclei to form a heavier nucleus is called**

- A relativity
- B fusion
- C energy level
- D photon

Understand It with Pulse | Flag a mistake

22 **A radioactive sample has a half life of 2 days. After 6 days, the fraction remaining is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **Splitting of a heavy nucleus into lighter nuclei is called**

A energy level

B photon

C fission

D photoelectric effect

Understand It with Pulse | Flag a mistake

24 **Which of the following is evidence that electrons have wave properties**

A electron diffraction patterns

B electrons having mass

C electrons having charge

D electrons orbiting in circles

Understand It with Pulse | Flag a mistake

25 **The theory that time and length depend on relative motion is called**

A photon

B photoelectric effect

C wave particle duality

D relativity

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. A
2. B
3. 50
4. 25
5. C
6. D
7. 25
8. A
9. B
10. C
11. 20
12. D
13. A
14. 3.31
15. B
16. C
17. B
18. D
19. A
20. A
21. B
22. 0.125
23. C
24. A
25. D

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