ARKANSAS PHYSICS · FINAL EXAM · 50 QUESTIONS

Final Exam — 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 walker goes 20 meters east and then returns 20 meters west to the start The displacement of the walker for the whole trip is**

- A 40 meters east
- B 0 meters
- C 20 meters east
- D 40 meters west

Understand It with Pulse | Flag a mistake

2 **A force of 40 newtons acts at 60 degrees to the direction of motion over 10 meters The work done is 40 times 10 times 0.5 joules The work done is**

- A 100 joules
- B 300 joules
- C 400 joules
- D 200 joules

Understand It with Pulse | Flag a mistake

3 **A current of 4 amperes flows through a resistor of 6 ohms The voltage across the resistor is**

- A 10 volts
- B 24 volts
- C 28 volts
- D 40 volts

Understand It with Pulse | Flag a mistake

4 **Light passes from air into water and slows down The ray bends**

- A Away from the normal
- B Back along its path
- C Not at all
- D Toward the normal

Understand It with Pulse | Flag a mistake

5 **A ball starts at 6 meters per second and accelerates at 4 meters per second squared for 5 seconds The displacement of the ball is**

- A 80 meters
- B 60 meters
- C 70 meters
- D 90 meters

Understand It with Pulse | Flag a mistake

6 **A mass of 2 kilograms is lifted 15 meters Use 10 meters per second squared for gravity The gain in gravitational potential energy is**

- A 150 joules
- B 450 joules
- C 300 joules
- D 600 joules

Understand It with Pulse | Flag a mistake

7 **Resistors of 4 ohms and 4 ohms are connected in parallel The total resistance is**

- A 8 ohms
- B 2 ohms
- C 4 ohms
- D 16 ohms

Understand It with Pulse | Flag a mistake

8 **A lens has a focal length of 0.5 meters Its power is $\frac{1}{0}$.5 diopters Its power is**

- A 0.5 diopters
- B 5 diopters
- C 20 diopters
- D 2 diopters

Understand It with Pulse | Flag a mistake

9 **A runner covers 120 meters in 8 seconds at a steady speed The speed of the runner is**

- A 10 meters per second
- B 15 meters per second
- C 20 meters per second
- D 30 meters per second

Understand It with Pulse | Flag a mistake

10 **A machine does 600 joules of work in 12 seconds The power of the machine is**

A 60 watts

B 50 watts

C 70 watts

D 120 watts

Understand It with Pulse | Flag a mistake

11 **A device uses 100 watts for 30 seconds The energy used is**

A 3000 joules

B 300 joules

C 130 joules

D 30000 joules

Understand It with Pulse | Flag a mistake

12 **In the photoelectric effect, the maximum kinetic energy of emitted electrons depends mainly on the**

A Intensity of the light

B Size of the metal

C Frequency of the light

D Time of exposure

Understand It with Pulse | Flag a mistake

13 **A force of 24 newtons acts on a mass of 6 kilograms The acceleration produced is**

A 2 meters per second squared

B 6 meters per second squared

C 4 meters per second squared

D 8 meters per second squared

Understand It with Pulse | Flag a mistake

14 **A mass of 6 kilograms moves at 5 meters per second Its momentum is**

- A 30 kilogram meters per second
- B 11 kilogram meters per second
- C 35 kilogram meters per second
- D 60 kilogram meters per second

Understand It with Pulse | Flag a mistake

15 **Like magnetic poles placed near each other will**

- A Attract
- B Have no effect
- C Become electric
- D Repel

Understand It with Pulse | Flag a mistake

16 **A sample starts with 80 grams of a radioactive isotope After two half lives, the mass remaining is**

- A 10 grams
- B 20 grams
- C 40 grams
- D 60 grams

Understand It with Pulse | Flag a mistake

17 **The coefficient of friction is 0.4 and the normal force on a block is 50 newtons The maximum friction force on the block is**

- A 10 newtons
- B 20 newtons
- C 15 newtons
- D 25 newtons

Understand It with Pulse | Flag a mistake

18 **A cart of mass 3 kilograms at 4 meters per second sticks to an identical cart at rest The speed of the combined carts is**

- A 1 meter per second
- B 3 meters per second
- C 4 meters per second
- D 2 meters per second

Understand It with Pulse | Flag a mistake

19 **A wave has a period of 0.25 seconds Its frequency is**

- A 0.25 hertz
- B 2 hertz
- C 25 hertz
- D 4 hertz

Understand It with Pulse | Flag a mistake

20 **Nuclear fission is the process in which a heavy nucleus**

- A Joins with a light nucleus
- B Splits into smaller nuclei
- C Gains electrons
- D Loses its protons only

Understand It with Pulse | Flag a mistake

21 **A person pushes on a wall and the wall pushes back on the person The two forces in this action reaction pair are**

- A Equal in size and opposite in direction
- B Equal in size and the same in direction
- C Unequal in size and opposite in direction
- D Acting on the same object only

Understand It with Pulse | Flag a mistake

22 **The graph shows force against distance for a moving object The work done is**

A 10 joules

B 16 joules

C 60 joules

D 6 joules

Understand It with Pulse | Flag a mistake

23 **The amplitude of a wave is a measure of its**

A Speed

B Wavelength

C Energy and maximum displacement

D Frequency

Understand It with Pulse | Flag a mistake

24 **Light shows both wave and particle behavior This is called wave particle**

A Duality

B Reflection

C Refraction

D Diffraction

Understand It with Pulse | Flag a mistake

25 **A car moves in a circle of radius 16 meters at a speed of 8 meters per second The centripetal acceleration of the car is**

A 4 meters per second squared

B 2 meters per second squared

C 8 meters per second squared

D 16 meters per second squared

Understand It with Pulse | Flag a mistake

26 **A force acts at right angles to the motion of an object The work done by that force is**

A Positive and large

B Negative and large

C Zero

D Equal to the force

Understand It with Pulse | Flag a mistake

27 **When light passes from air into glass it slows down and bends This bending of light is called**

A Reflection

B Refraction

C Diffraction

D Interference

Understand It with Pulse | Flag a mistake

28 **Total internal reflection can occur when light travels from a denser material to a**

A Denser material

B Vacuum only

C Mirror only

D Less dense material

Understand It with Pulse | Flag a mistake

29 **A cyclist has a total displacement of 90 meters in 15 seconds The average velocity of the cyclist is**

A 5 meters per second

B 9 meters per second

C 15 meters per second

D 6 meters per second

Understand It with Pulse | Flag a mistake

30 **A motor does 720 joules of work in 8 seconds What is its power in watts**

ANSWER

Understand It with Pulse | Flag a mistake

31 **A charge of 90 coulombs passes a point in 30 seconds The current is**

A 2 amperes

B 3 amperes

C 6 amperes

D 9 amperes

Understand It with Pulse | Flag a mistake

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

- A 25 degrees
- B 40 degrees
- C 100 degrees
- D 50 degrees

Understand It with Pulse | Flag a mistake

33 **An object speeds up from rest to 30 meters per second in 5 seconds The acceleration of the object is**

- A 5 meters per second squared
- B 10 meters per second squared
- C 6 meters per second squared
- D 15 meters per second squared

Understand It with Pulse | Flag a mistake

34 **A mass of 4 kilograms moves at 6 meters per second Its kinetic energy is one half times 4 times 36 joules Its kinetic energy is**

- A 72 joules
- B 48 joules
- C 96 joules
- D 144 joules

Understand It with Pulse | Flag a mistake

35 **Resistors of 5 ohms and 10 ohms are connected in series The total resistance is**

- A 15 ohms
- B 5 ohms
- C 50 ohms
- D 2 ohms

Understand It with Pulse | Flag a mistake

36 **A lens has a focal length of 0.25 meters Its power is $\frac{1}{0}$.25 diopters Its power is**

- A 0.25 diopters
- B 2 diopters
- C 4 diopters
- D 25 diopters

Understand It with Pulse | Flag a mistake

37 **Use 10 meters per second squared for gravity A rock dropped from rest falls for 5 seconds The distance the rock falls in 5 seconds is**

- A 50 meters
- B 125 meters
- C 100 meters
- D 150 meters

Understand It with Pulse | Flag a mistake

38 **A mass of 5 kilograms moves at 7 meters per second Its momentum is**

A 12 kilogram meters per second

B 42 kilogram meters per second

C 70 kilogram meters per second

D 35 kilogram meters per second

Understand It with Pulse | Flag a mistake

39 **A wave has a frequency of 8 hertz and a wavelength of 5 meters The wave speed is**

A 13 meters per second

B 3 meters per second

C 45 meters per second

D 40 meters per second

Understand It with Pulse | Flag a mistake

40 **In an atom, electrons are found**

A In the nucleus

B Outside the nucleus

C Only in protons

D Only in neutrons

Understand It with Pulse | Flag a mistake

41 **A mass of 12 kilograms rests on the ground Use 10 meters per second squared for gravity The weight of the mass is**

A 120 newtons

B 60 newtons

C 180 newtons

D 240 newtons

Understand It with Pulse | Flag a mistake

42 **A motor does 1000 joules of work in 20 seconds The power of the motor is**

- A 20 watts
- B 80 watts
- C 50 watts
- D 100 watts

Understand It with Pulse | Flag a mistake

43 **The distance between two adjacent crests of a wave is its**

- A Amplitude
- B Frequency
- C Period
- D Wavelength

Understand It with Pulse | Flag a mistake

44 **Fusion requires very high temperatures because nuclei must overcome**

A Gravity

B Electric repulsion between positive charges

C Friction

D Magnetic attraction

Understand It with Pulse | Flag a mistake

45 **The graph shows position against time for a moving object The velocity of the object is**

A 1 meter per second

B 3 meters per second

C 4 meters per second

D 2 meters per second

Understand It with Pulse | Flag a mistake

46 **The graph shows force against distance for a cart The work done in moving 4 meters is**

A 20 joules

B 40 joules

C 80 joules

D 160 joules

Understand It with Pulse | Flag a mistake

47 **The graph shows a wave The period of the wave in the graph is about 6.28 units The frequency is about**

A 1 hertz

B 3 hertz

C 0.16 hertz

D 6 hertz

Understand It with Pulse | Flag a mistake

48 **Diffraction is most noticeable when light passes through an opening close in size to its**

- A Wavelength
- B Amplitude
- C Speed
- D Frequency in hertz

Understand It with Pulse | Flag a mistake

49 **A ball is thrown straight up At the top of its flight its velocity is zero and its acceleration is**

- A Zero
- B Upward at 10 meters per second squared
- C Downward at 10 meters per second squared
- D Downward at 20 meters per second squared

Understand It with Pulse | Flag a mistake

50 **Power is defined as the rate of doing**

A Work

B Force

C Momentum

D Velocity

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. B
2. D
3. B
4. D
5. A
6. C
7. B
8. D
9. B
10. B
11. A
12. C
13. C
14. A
15. D
16. B
17. B
18. D
19. D
20. B
21. A
22. C
23. C
24. A
25. A
26. C
27. B
28. D
29. D
30. 90
31. B
32. C
33. C
34. A
35. A
36. C
37. B
38. D
39. D
40. B
41. A
42. C
43. D
44. B
45. D
46. B
47. C
48. A
49. C
50. A

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