ARIZONA 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 **An object moves with initial speed 6 m/s and acceleration 2 $\frac{\text{m}}{\text{s}^2}$ for 4 s. Its displacement is**

- **A** 40 m
- **B** 24 m
- **C** 56 m
- **D** 32 m

Understand It with Pulse | Flag a mistake

2 **A force of 15 N pushes an object 4 m in the direction of the force. The work done is**

- A 19 J
- B 60 J
- C 11 J
- D 3.75 J

Understand It with Pulse | Flag a mistake

3 **A voltage of 24 V drives a current of 6 A. The resistance is**

- A 144 ohms
- B 30 ohms
- C 18 ohms
- D 4 ohms

Understand It with Pulse | Flag a mistake

4 Light of frequency 6×10^{14} Hz travels at 3.0×10^{8} $\frac{m}{s}$. Its wavelength is

- **A** 50 nm
- **B** 5 nm
- **C** 1800 nm
- **D** 500 nm

Understand It with Pulse | Flag a mistake

5 Use g = 10 $\frac{m}{s^2}$. An object dropped from rest falls for 6 s. Its speed then, in meters per second, is _____

ANSWER _____

Understand It with Pulse | Flag a mistake

6 Use $g = 10\ \frac{m}{s^2}$. An object of mass 5 kg is 4 m above the ground. Its gravitational potential energy is

- **A** 200 J
- **B** 9 J
- **C** 20 J
- **D** 125 J

Understand It with Pulse | Flag a mistake

7 A current of 2 A flows for 30 s. The charge that flows is

- **A** 15 C
- **B** 32 C
- **C** 60 C
- **D** 28 C

Understand It with Pulse | Flag a mistake

8 **In the photoelectric effect, no electrons are emitted when the light frequency is below the**

- **A** speed of light
- **B** threshold frequency
- **C** amplitude
- **D** intensity

Understand It with Pulse | Flag a mistake

9 **A net force of 36 N acts on a 9 kg object. Its acceleration is**

- **A** $324\ \frac{m}{s^2}$
- **B** $27\ \frac{m}{s^2}$
- **C** $45\ \frac{m}{s^2}$
- **D** $4\ \frac{m}{s^2}$

Understand It with Pulse | Flag a mistake

10 **A force of 20 N acts for 3 s. The impulse delivered is**

- **A** 6.7 N s
- **B** 23 N s
- **C** 17 N s
- **D** 60 N s

Understand It with Pulse | Flag a mistake

11 **A changing magnetic field through a coil induces a**

- **A** current
- **B** resistance
- **C** charge
- **D** mass

Understand It with Pulse | Flag a mistake

12 **When light enters glass from air at an angle, it slows down and bends**

- A away from the normal
- B toward the normal
- C back along its path
- D not at all

Understand It with Pulse | Flag a mistake

13 **Forces of 70 N east and 30 N west act on an object. The net force is**

- A 100 N east
- B 100 N west
- C 40 N west
- D 40 N east

Understand It with Pulse | Flag a mistake

14 **If the speed of an object doubles while its mass stays the same, its kinetic energy becomes**

- A the same
- B twice as large
- C four times as large
- D half as large

Understand It with Pulse | Flag a mistake

15 **A wave has speed 300 m/s and wavelength 5 m. Its frequency is**

- A 1500 Hz
- B 60 Hz
- C 295 Hz
- D 305 Hz

Understand It with Pulse | Flag a mistake

16 **An alpha particle consists of**

- **A** two protons and two neutrons
- **B** one proton and one electron
- **C** four electrons
- **D** two protons only

Understand It with Pulse | Flag a mistake

17 **Use $g = 10\ \frac{m}{s^2}$. A ball is thrown upward with vertical speed 40 m/s. The time to reach its highest point is**

- **A** 2 s
- **B** 8 s
- **C** 5 s
- **D** 4 s

Understand It with Pulse | Flag a mistake

18 **An object of mass 2 kg moves at 10 m/s. Its kinetic energy, in joules, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **In a parallel circuit, the voltage across each branch is**

A the same for each branch

B zero in every branch

C larger in the first branch

D split equally among branches

Understand It with Pulse | Flag a mistake

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

- **A** splits into smaller nuclei
- **B** joins with another nucleus
- **C** loses only electrons
- **D** becomes stable by gaining mass

Understand It with Pulse | Flag a mistake

21 **An object moves in a circle at speed 6 m/s with radius 9 m. Its centripetal acceleration is**

- **A** $54\ \frac{m}{s^2}$
- **B** $15\ \frac{m}{s^2}$
- **C** $1.5\ \frac{m}{s^2}$
- **D** $4\ \frac{m}{s^2}$

Understand It with Pulse | Flag a mistake

22 Use g = 10 $\frac{m}{s^2}$. An object of mass 2 kg is 15 m above the ground. Its gravitational potential energy, in joules, is _____

ANSWER _____

Understand It with Pulse | Flag a mistake

23 A voltage of 20 V drives a current of 5 A. The resistance, in ohms, is _____

ANSWER _____

Understand It with Pulse | Flag a mistake

24 In the Bohr model of the atom, electrons occupy

A. random positions everywhere

B. the nucleus only

C. allowed energy levels

D. one fixed orbit only

Understand It with Pulse | Flag a mistake

25 **An object travels 240 m in 20 s. Its average speed, in meters per second, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

26 **Use g = 10 $\frac{m}{s^2}$. An object dropped from a height of 20 m reaches the ground with speed about**

A 10 m/s

B 40 m/s

C 20 m/s

D 200 m/s

Understand It with Pulse | Flag a mistake

27 **A wave has speed 400 m/s and wavelength 8 m. Its frequency, in hertz, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **Use hc = 1240 eV nm. A photon of wavelength 400 nm has energy, in electron volts, of ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **Displacement differs from distance because displacement includes**

A only the total path length

B only the time taken

C only the speed

D direction

Understand It with Pulse | Flag a mistake

30 **When an object is lifted at steady speed, the work done by the lifting force becomes stored as**

A kinetic energy

B gravitational potential energy

C thermal energy only

D chemical energy only

Understand It with Pulse | Flag a mistake

31 **A voltage of 9 V drives a current of 3 A. The resistance is**

A 27 ohms

B 12 ohms

C 3 ohms

D 6 ohms

Understand It with Pulse | Flag a mistake

32 Use hc = 1240 eV nm. A photon of wavelength 310 nm has energy

- **A** 2 eV
- **B** 4 eV
- **C** 8 eV
- **D** 1 eV

Understand It with Pulse | Flag a mistake

33 An object moves with initial speed 10 m/s and acceleration 4 $\frac{m}{s^2}$ for 3 s. Its displacement is

- **A** 30 m
- **B** 48 m
- **C** 66 m
- **D** 42 m

Understand It with Pulse | Flag a mistake

34 **A machine does 150 J of work in 5 s. Its power output is**

A 750 W

B 145 W

C 30 W

D 155 W

Understand It with Pulse | Flag a mistake

35 **A device operates at 20 V and draws 2 A. The electrical power used is**

A 10 W

B 22 W

C 18 W

D 40 W

Understand It with Pulse | Flag a mistake

36 **In the photoelectric effect, increasing the frequency of the light above the threshold mainly increases the**

- **A** maximum kinetic energy of each electron
- **B** number of photons only
- **C** wavelength of the light
- **D** mass of the metal

Understand It with Pulse | Flag a mistake

37 **Use $g = 10\ \frac{m}{s^2}$. A ball is thrown upward with vertical speed 50 m/s. The time to reach its highest point, in seconds, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **An object of mass 8 kg moves at 2.5 m/s. Its momentum is**

- **A** 3.2 kg $\frac{m}{s}$
- **B** 10.5 kg $\frac{m}{s}$
- **C** 20 kg $\frac{m}{s}$
- **D** 5.5 kg $\frac{m}{s}$

Understand It with Pulse | Flag a mistake

39 **A voltage of 30 V is applied across a resistor of 6 ohms. The current, in amperes, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **A sample of 96 g of a radioactive material decays through two half lives. The mass remaining is**

- **A** 192 g
- **B** 48 g
- **C** 24 g
- **D** 12 g

Understand It with Pulse | Flag a mistake

41 **Use g = 10 $\frac{m}{s^2}$. The weight of an 8 kg object is**

- **A** 0.8 N
- **B** 18 N
- **C** 80 N
- **D** 800 N

Understand It with Pulse | Flag a mistake

42 **An object of mass 3 kg moves at 6 m/s. Its kinetic energy, in joules, is _____**

ANSWER

Understand It with Pulse | Flag a mistake

43 **A material that allows electric charge to flow easily through it is called a**

A conductor

B insulator

C magnet

D resistor only

Understand It with Pulse | Flag a mistake

44 **Light shows interference like a wave, but it also arrives in discrete packets of energy. The packets show light also has**

A particle behavior

B magnetic behavior only

C chemical behavior only

D no behavior at all

Understand It with Pulse | Flag a mistake

45 **The weight of an object on the Moon is less than on Earth because its weight depends on**

A its mass alone

B the strength of gravity where it is

C its volume alone

D its speed alone

Understand It with Pulse | Flag a mistake

46 **An object of mass 3 kg moves at 8 m/s and sticks to an object of mass 3 kg at rest. Their common speed after sticking together is**

- A 8 m/s
- B 4 m/s
- C 2 m/s
- D 16 m/s

Understand It with Pulse | Flag a mistake

47 **A device operates at 5 V and draws 4 A. The electrical power, in watts, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

48 **For an atom to absorb a photon, the photon energy must match the**

A difference between two energy levels

B mass of the nucleus

C speed of the electron

D temperature of the atom

Understand It with Pulse | Flag a mistake

49 **An object travels 180 m in 12 s. Its average speed, in meters per second, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

50 **In an inelastic collision, momentum is conserved but kinetic energy is**

A also conserved

B not conserved

C doubled

D created

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	A	**18.**	100	**35.**	D
2.	B	**19.**	A	**36.**	A
3.	D	**20.**	A	**37.**	5
4.	D	**21.**	D	**38.**	C
5.	60	**22.**	300	**39.**	5
6.	A	**23.**	4	**40.**	C
7.	C	**24.**	C	**41.**	C
8.	B	**25.**	12	**42.**	54
9.	D	**26.**	C	**43.**	A
10.	D	**27.**	50	**44.**	A
11.	A	**28.**	3.1	**45.**	B
12.	B	**29.**	D	**46.**	B
13.	D	**30.**	B	**47.**	20
14.	C	**31.**	C	**48.**	A
15.	B	**32.**	B	**49.**	15
16.	A	**33.**	B	**50.**	B
17.	D	**34.**	C		

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