NOVA SCOTIA PHYSICS 12 · FINAL EXAM

Final Exam — Practice Test

Nova Scotia Physics 12 • 50 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 **A velocity of 100 metres per second acts at an angle whose sine is 0.8 and cosine is 0.6. The horizontal component, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A force of 50 newtons acts at a distance of 0.4 metres from a pivot, perpendicular to the lever. The torque, in newton metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A pendulum has period 0.5 seconds. If its length is multiplied by 4, the new period, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A charge of 4 coulombs in an electric field feels a force of 12 newtons. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A sample starts with 80 grams of a radioactive isotope. After 1 half lives the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A projectile is launched at 45 degrees with speed 20 metres per second . Using g = 10 metres per second squared , the horizontal range , in metres , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **An object of mass 5 kilograms moves at 4 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **An oscillator has period 0.5 seconds. Its frequency, in hertz, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A current of 2 amperes flows through a resistor of 10 ohms. The potential difference, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **Light photons of energy 5 electronvolts strike a metal with work function 2 electronvolts. The maximum kinetic energy of emitted electrons, in electronvolts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **A projectile is launched vertically with vertical speed 30 metres per second . Using g = 10 , the time to return to launch height , in seconds , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **A 6 kilogram object moving at 4 metres per second collides with a stationary 2 kilogram object and they stick together. Their common speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **An oscillator has energy 5 joules. If its amplitude doubles, the new energy, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **Resistors of 5 ohms, 5 ohms and 10 ohms are connected in series. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **A photon has energy 3 electronvolts. A photon of twice the frequency has energy, in electronvolts, of**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **A projectile is launched vertically with vertical speed 30 metres per second . Using g = 10 , the maximum height , in metres , is**

ANSWER

Understand It with Pulse | Flag a mistake

17 **A planet surface gravity is 9.8 metres per second squared. If the planet mass doubles with the same radius, the new surface gravity is**

ANSWER

Understand It with Pulse | Flag a mistake

18 **An oscillator completes 10 oscillations in 20 seconds. Its period, in seconds, is**

ANSWER

Understand It with Pulse | Flag a mistake

19 **Resistors of 12 ohms and 4 ohms are connected in parallel. The total resistance, in ohms, is**

ANSWER

Understand It with Pulse | Flag a mistake

20 **A radio wave has frequency 100 megahertz. Using the speed of light as 300 million metres per second, its wavelength, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **At the top of its flight a projectile has vertical velocity equal to**

A maximum

B its launch speed

C zero

D g

Understand It with Pulse | Flag a mistake

22 **The centre of gravity of a uniform object is at its**

- A heaviest end
- B pivot only
- C geometric centre
- D top

Understand It with Pulse | Flag a mistake

23 **In simple harmonic motion speed is greatest at the**

- A extremes
- B start
- C equilibrium position
- D end only

Understand It with Pulse | Flag a mistake

24 **Electric field lines point away from**

A positive charges

B negative charges

C neutral objects

D magnets only

Understand It with Pulse | Flag a mistake

25 **A photon is a packet of**

A light energy

B matter

C charge

D sound

Understand It with Pulse | Flag a mistake

26 **Relative velocity is the velocity of one object as seen from**

A a fixed star only

B the ground only

C its own frame only

D another object

Understand It with Pulse | Flag a mistake

27 **Gravitational force between two masses decreases when the distance**

A decreases

B stays the same

C doubles mass only

D increases

Understand It with Pulse | Flag a mistake

28 **The period of a simple pendulum depends on its length and**

- A mass
- B amplitude for small angles
- C colour
- D gravitational field strength

Understand It with Pulse | Flag a mistake

29 **A transformer works only with**

- A alternating current
- B direct current
- C static charge
- D batteries only

Understand It with Pulse | Flag a mistake

30 **Gamma radiation is**

A high energy electromagnetic waves

B helium nuclei

C electrons

D neutrons

Understand It with Pulse | Flag a mistake

31 **A velocity of 100 metres per second acts at an angle whose sine is 0.6 and cosine is 0.8. The horizontal component, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

32 **A force of 25 newtons acts at a distance of 2 metres from a pivot, perpendicular to the lever. The torque, in newton metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 **A pendulum has period 1.5 seconds. If its length is multiplied by 4, the new period, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

34 **A charge of 2 coulombs in an electric field feels a force of 30 newtons. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **A sample starts with 64 grams of a radioactive isotope. After 2 half lives the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

36 **A projectile is launched at 45 degrees with speed 50 metres per second . Using g = 10 metres per second squared , the horizontal range , in metres , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **An object of mass 8 kilograms moves at 5 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **An oscillator has period 4 seconds. Its frequency, in hertz, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **A current of 1 amperes flows through a resistor of 12 ohms. The potential difference, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **Light photons of energy 3 electronvolts strike a metal with work function 2 electronvolts. The maximum kinetic energy of emitted electrons, in electronvolts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

41 **A projectile is launched vertically with vertical speed 50 metres per second . Using g = 10 , the maximum height , in metres , is**

ANSWER

Understand It with Pulse | Flag a mistake

42 **A planet surface gravity is 12 metres per second squared. If the planet mass doubles with the same radius, the new surface gravity is**

ANSWER

Understand It with Pulse | Flag a mistake

43 **An oscillator completes 4 oscillations in 20 seconds. Its period, in seconds, is**

ANSWER

Understand It with Pulse | Flag a mistake

44 **Resistors of 8 ohms and 8 ohms are connected in parallel. The total resistance, in ohms, is**

ANSWER

Understand It with Pulse | Flag a mistake

45 **A radio wave has frequency 1000 megahertz. Using the speed of light as 300 million metres per second, its wavelength, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

46 **Projectile motion is the result of constant horizontal velocity and**

A horizontal acceleration

B vertical acceleration due to gravity

C zero gravity

D constant vertical velocity

Understand It with Pulse | Flag a mistake

47 **A stable object has a low centre of gravity and a**

- A narrow base
- B wide base
- C high mass
- D small weight

Understand It with Pulse | Flag a mistake

48 **A spring with a larger spring constant oscillates with a**

- A longer period
- B shorter period
- C larger amplitude
- D smaller mass

Understand It with Pulse | Flag a mistake

49 **A voltmeter is connected in parallel because it measures**

A current through a component

B potential difference across a component

C charge only

D energy only

Understand It with Pulse | Flag a mistake

50 **Bohr model states that electrons exist in**

A random positions only

B fixed energy levels

C the nucleus

D continuous orbits only

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	60	**18.**	2	**35.**	16
2.	20	**19.**	3	**36.**	250
3.	1	**20.**	3	**37.**	40
4.	3	**21.**	C	**38.**	0.25
5.	40	**22.**	C	**39.**	12
6.	40	**23.**	C	**40.**	1
7.	20	**24.**	A	**41.**	125
8.	2	**25.**	A	**42.**	24
9.	20	**26.**	D	**43.**	5
10.	3	**27.**	D	**44.**	4
11.	6	**28.**	D	**45.**	0.3
12.	3	**29.**	A	**46.**	B
13.	20	**30.**	A	**47.**	B
14.	20	**31.**	80	**48.**	B
15.	6	**32.**	50	**49.**	B
16.	45	**33.**	3	**50.**	B
17.	19.6	**34.**	15		

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