NOVA SCOTIA ADVANCED PHYSICS 11 · 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 glider travels 225 metres in 9 seconds at constant velocity. Its velocity, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A mass of 18 kilograms accelerates at 2 metres per second squared. The net force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A mass of 4 kilograms rises 15 metres . Use g = 10 metres per second squared . The gain in gravitational potential energy , in joules , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A ballistic pendulum uses conservation of momentum during the collision and then conservation of**

A momentum during the swing

B mass during the swing

C energy during the swing

D charge

Understand It with Pulse | Flag a mistake

5 **An advanced wave experiment uses frequency 12 hertz and wavelength 5 metres. The wave speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **For accelerated motion from rest, the relationship between displacement and time² is a**

- A curve upward only
- B straight line
- C horizontal line
- D circle

Understand It with Pulse | Flag a mistake

7 **A force of 100 newtons at 60 degrees to the horizontal has a horizontal component, in newtons, of**

- A 50
- B 87
- C 100
- D 25

Understand It with Pulse | Flag a mistake

8 **A falling object with air resistance reaches terminal velocity when drag equals**

- A mass
- B speed
- C weight
- D height

Understand It with Pulse | Flag a mistake

9 **A force of 5 newtons acting for 10 seconds gives impulse, in newton seconds, of**

- A 15
- B 50
- C 2
- D 500

Understand It with Pulse | Flag a mistake

10 **A microwave oven uses electromagnetic waves to heat food by exciting**

- A metals
- B glass
- C air only
- D water molecules

Understand It with Pulse | Flag a mistake

11 **A stroboscope can freeze motion by flashing at the same frequency as the**

- A room light
- B camera
- C moving object cycle
- D eye

Understand It with Pulse | Flag a mistake

12 **A hanging mass in equilibrium has tension equal to its**

A mass

B speed

C height

D weight

Understand It with Pulse | Flag a mistake

13 **A kilowatt hour is a unit of**

A power

B force

C energy

D current

Understand It with Pulse | Flag a mistake

14 **A 3 kilogram object moving at 8 metres per second collides and sticks to a 5 kilogram object at rest. Their common speed, in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

15 **A sound wave in air is a series of compressions and**

A reflections

B refractions

C rarefactions

D nodes only

Understand It with Pulse | Flag a mistake

16 **An object starts at 3 metres per second and accelerates at 2 metres per second squared for 6 seconds. Its final speed, in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

17 **A spring scale measures**

A force

B mass directly

C energy

D speed

Understand It with Pulse | Flag a mistake

18 **A motor rated at 500 watts does 500 joules of work each**

A second

B minute

C hour

D metre

Understand It with Pulse | Flag a mistake

19 **A Newton cradle shows momentum transfer through a line of**

A inelastic collisions only

B friction

C magnets

D elastic collisions

Understand It with Pulse | Flag a mistake

20 **An ambulance siren sounds higher pitched as it approaches because wavefronts are**

A stretched ahead

B compressed ahead of the source

C absent ahead

D reflected

Understand It with Pulse | Flag a mistake

21 **A glider travels 360 metres in 10 seconds at constant velocity. Its velocity, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A mass of 30 kilograms accelerates at 3 metres per second squared. The net force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **A spring compressed twice as far stores**

A twice the elastic energy

B the same energy

C half the energy

D four times the elastic energy

Understand It with Pulse | Flag a mistake

24 **A superball bouncing back changes momentum by more than a ball that sticks because velocity**

- **A** stays zero
- **B** reverses
- **C** doubles in mass
- **D** loses energy only

Understand It with Pulse | Flag a mistake

25 **A wave has wavelength 8 metres and speed 320 metres per second. Its frequency, in hertz, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

26 **A cart starts at 10 metres per second and accelerates at 4 metres per second squared for 5 seconds. The displacement, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **A laboratory cart of mass 8 kilograms accelerates at 6 metres per second squared. The net force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **A motor does 900 joules of work in 15 seconds. Its power, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **An advanced cart of mass 10 kilograms moves at 6 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

30 **A wave has frequency 24 hertz and wavelength 5 metres. Its speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **Average speed uses total distance, while average velocity uses total**

A time only

B displacement

C mass

D force

Understand It with Pulse | Flag a mistake

32 **A vector at 30 degrees to the horizontal has a horizontal component found using**

A cosine of the angle

B sine of the angle only

C tangent only

D the full vector only

Understand It with Pulse | Flag a mistake

33 **A system with friction loses mechanical energy mainly as**

A thermal energy

B kinetic energy gain

C potential energy gain

D mass

Understand It with Pulse | Flag a mistake

34 **An object of mass 15 kilograms moves at 4 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **An advanced wave experiment uses frequency 60 hertz and wavelength 2 metres. The wave speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

36 **Projectile motion vertically has acceleration equal to gravity and horizontal velocity that is**

A increasing

B decreasing to zero

C zero

D constant ignoring air resistance

Understand It with Pulse | Flag a mistake

37 **An Atwood machine with unequal masses accelerates because the net force is the**

A sum of weights

B larger weight only

C smaller weight only

D difference in weights

Understand It with Pulse | Flag a mistake

38 **An advanced experiment applies 120 newtons over 3 metres. The work done, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **Two objects move in the same direction with momenta 12 and 6 kilogram metres per second. Their total momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **Shortening a vibrating string raises its frequency because wavelength**

A decreases

B increases

C stays the same

D becomes zero

Understand It with Pulse | Flag a mistake

41 **Velocity decreases steadily over time. The acceleration is**

- A positive and constant
- B zero
- C negative and constant
- D increasing

Understand It with Pulse | Flag a mistake

42 **If mass doubles and net force stays constant, acceleration**

- A doubles
- B stays the same
- C quadruples
- D halves

Understand It with Pulse | Flag a mistake

43 **Power in watts can also be written as joules per**

A second

B metre

C newton

D kilogram

Understand It with Pulse | Flag a mistake

44 **Impulse is also the area under a force against**

A distance graph

B time graph

C mass graph

D velocity graph

Understand It with Pulse | Flag a mistake

45 **The fundamental frequency of a string depends on tension and mass per unit**

A colour

B temperature only

C amplitude

D length

Understand It with Pulse | Flag a mistake

46 **Use g = 9.8 metres per second squared . An object dropped from rest falls for 4 seconds . Its speed then , in metres per second , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **The coefficient of friction is the ratio of friction force to**

A weight only

B normal force

C applied force

D mass

Understand It with Pulse | Flag a mistake

48 **Work done by a force at an angle uses the component of force**

A along the displacement

B perpendicular to displacement

C opposite to motion always

D equal to weight

Understand It with Pulse | Flag a mistake

49 **Two objects move in the same direction with momenta 20 and 8 kilogram metres per second. Their total momentum, in kilogram metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

50 **Total internal reflection happens when light travels from a denser to a less dense medium at an angle above the**

A normal angle

B reflected angle

C critical angle

D zero angle

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	25	**18.**	A	**35.**	120
2.	36	**19.**	D	**36.**	D
3.	600	**20.**	B	**37.**	D
4.	C	**21.**	36	**38.**	360
5.	60	**22.**	90	**39.**	18
6.	B	**23.**	D	**40.**	A
7.	A	**24.**	B	**41.**	C
8.	C	**25.**	40	**42.**	D
9.	B	**26.**	100	**43.**	A
10.	D	**27.**	48	**44.**	B
11.	C	**28.**	60	**45.**	D
12.	D	**29.**	60	**46.**	39.2
13.	C	**30.**	120	**47.**	B
14.	3	**31.**	B	**48.**	A
15.	C	**32.**	A	**49.**	28
16.	15	**33.**	A	**50.**	C
17.	A	**34.**	60		

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