NOVA SCOTIA ADVANCED PHYSICS 11 · UNIT D · 25 QUESTIONS

Impulse, Momentum and One-Dimensional Collisions — 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 force of 40 newtons acts for 5 seconds. The impulse, in newton seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **An advanced cart of mass 6 kilograms moves at 8 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **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

4 **A car airbag increases impact time, which for a fixed momentum change reduces**

- A impulse
- B mass
- C average force
- D speed change

Understand It with Pulse | Flag a mistake

5 **A collision in one dimension can be solved using momentum plus, for elastic cases, kinetic energy**

- A loss
- B conservation
- C creation
- D transfer to heat

Understand It with Pulse | Flag a mistake

6 **A collision that conserves kinetic energy is called**

- A inelastic
- B perfectly inelastic
- C elastic
- D explosive

Understand It with Pulse | Flag a mistake

7 **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

8 **A force that is larger for a shorter time can give the same impulse as a smaller force acting for longer if the**

- A forces are equal
- B areas are equal
- C times are equal
- D masses are equal

Understand It with Pulse | Flag a mistake

9 **A glancing collision in two dimensions needs momentum conservation in**

- A one direction only
- B two perpendicular directions
- C three directions always
- D no direction

Understand It with Pulse | Flag a mistake

10 **A 10 kilogram object moving at 1 metre per second has momentum, in kilogram metres per second, of**

- A 10
- B 11
- C 9
- D 100

Understand It with Pulse | Flag a mistake

11 **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

12 **A 2 kilogram object moving at 3 metres per second has momentum, in kilogram metres per second, of**

A 5

B 1

C 9

D 6

Understand It with Pulse | Flag a mistake

13 **A 2 kilogram object moving at 9 metres per second stops in 3 seconds. The average force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **A momentum of 40 kilogram metres per second for a 8 kilogram object means speed, in metres per second, of**

- A 48
- B 32
- C 5
- D 320

Understand It with Pulse | Flag a mistake

15 **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

16 **A perfectly elastic collision between equal masses with one initially at rest results in the moving mass**

A continuing unchanged

B stopping

C reversing at double speed

D sticking

Understand It with Pulse | Flag a mistake

17 **A rocket in space gains momentum as exhaust gas gains momentum in the**

A same direction

B upward direction only

C opposite direction

D downward direction only

Understand It with Pulse | Flag a mistake

18 **A student report on collisions should compare measured total momentum before and after and discuss**

- A opinions
- B colours
- C uncertainties
- D names

Understand It with Pulse | Flag a mistake

19 **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

20 **An air track reduces friction so that momentum conservation can be tested more**

- A slowly
- B visibly only
- C cheaply
- D accurately

Understand It with Pulse | Flag a mistake

21 **An impulse of 30 newton seconds on a 6 kilogram object at rest gives speed, in metres per second, of**

- A 36
- B 24
- C 180
- D 5

Understand It with Pulse | Flag a mistake

22 **A force of 60 newtons acts for 3 seconds. The impulse, in newton seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **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

24 **A force of 25 newtons acts for 8 seconds. The impulse, in newton seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **An advanced cart of mass 4 kilograms moves at 15 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	200	**10.**	A	**19.**	B
2.	48	**11.**	3	**20.**	D
3.	C	**12.**	D	**21.**	D
4.	C	**13.**	6	**22.**	180
5.	B	**14.**	C	**23.**	60
6.	C	**15.**	D	**24.**	200
7.	B	**16.**	B	**25.**	60
8.	B	**17.**	C		
9.	B	**18.**	C		

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