NOVA SCOTIA PHYSICS 11 · UNIT D

Impulse, Momentum and One-Dimensional Collisions — Practice Test

Nova Scotia Physics 11 • 25 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 force of 10 newtons acts on a bowling ball for 4 seconds. The impulse, in newton seconds, is**



ANSWER

Understand It with Pulse | Flag a mistake

2 **An object of mass 2 kilograms moves at 5 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

3 **An object of mass 2 kilograms and momentum 20 kilogram metres per second moves at speed, in metres per second, of**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A ball bouncing off a wall changes momentum because its velocity**

A stays the same

B loses mass

C gains mass

D reverses direction

Understand It with Pulse | Flag a mistake

5 **A collision where kinetic energy is lost as heat and sound is**

- A inelastic
- B elastic
- C perfect
- D absent

Understand It with Pulse | Flag a mistake

6 **A crumple zone in a car increases impact time and so reduces**



A momentum change

B mass

C average force

D speed only

Understand It with Pulse | Flag a mistake

7 **A fast ball has more momentum than a slow ball of the same mass because momentum depends on**

A colour

B size only

C velocity

D temperature

Understand It with Pulse | Flag a mistake

8 **A 4 kilogram object at rest gains momentum 24 kilogram metres per second. Its speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A longer impact time for the same momentum change gives a**

- A larger average force
- B smaller average force
- C zero force
- D constant force

Understand It with Pulse | Flag a mistake

10 **A Newton second is equivalent to a kilogram metre per**

- A second
- B metre
- C joule
- D watt

Understand It with Pulse | Flag a mistake

11 **A rocket moves forward by expelling gas backwards, which is an example of momentum**



A creation

B loss

C transfer to heat only

D conservation

Understand It with Pulse | Flag a mistake

12 **A seat belt reduces injury mainly by increasing the time over which momentum**

A is created

B is stored

C changes

D is lost to heat only

Understand It with Pulse | Flag a mistake

13 **A system with no external impulse has total momentum that is**

A increasing

B constant

C decreasing

D zero always

Understand It with Pulse | Flag a mistake

14 **An elastic collision conserves both momentum and**

- A mass only
- B heat
- C potential energy only
- D kinetic energy

Understand It with Pulse | Flag a mistake

15 **An explosion in a closed system starts with total momentum zero, so the fragments move in**

- A the same direction
- B opposite directions
- C one direction only
- D no direction

Understand It with Pulse | Flag a mistake

16 **An inelastic collision conserves momentum but not all**

A kinetic energy

B mass

C charge

D time

Understand It with Pulse | Flag a mistake

17 **When a force pushes a crate, the impulse can also be written as force multiplied by**



A time

B distance

C mass

D velocity

Understand It with Pulse | Flag a mistake

18 **Impulse equals change in**

A mass

B momentum

C energy

D distance

Understand It with Pulse | Flag a mistake

19 **In a closed system, total momentum before a collision equals total momentum**

A before only

B at rest only

C after the collision

D in one object

Understand It with Pulse | Flag a mistake

20 **In a head on collision of two billiard balls of equal mass, one at rest, an elastic collision transfers**



A no momentum

B almost all momentum to the resting mass

C all mass

D all energy to heat

Understand It with Pulse | Flag a mistake

21 **A force of 20 newtons acts for 3 seconds. The impulse, in newton seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **An object of mass 4 kilograms moves at 3 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **An object of mass 5 kilograms and momentum 20 kilogram metres per second moves at speed, in metres per second, of**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **A force of 15 newtons acts for 2 seconds. The impulse, in newton seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **A sled of mass 10 kilograms moves at 2 metres per second. Its momentum, in kilogram metres per second, is**



ANSWER

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. 40
2. 10
3. 10
4. D
5. A
6. C
7. C
8. 6
9. B
10. A
11. D
12. C
13. B
14. D
15. B
16. A
17. A
18. B
19. C
20. B
21. 60
22. 12
23. 4
24. 30
25. 20

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