ARKANSAS PHYSICS · UNIT 2 · 25 QUESTIONS

Work, Energy, and Momentum — 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 20 newtons pushes a box 6 meters in the direction of the force The work done on the box is**

- A 26 joules
- B 80 joules
- C 120 joules
- D 140 joules

Understand It with Pulse | Flag a mistake

2 **A force of 40 newtons acts at 60 degrees to the direction of motion over 10 meters The work done is 40 times 10 times 0.5 joules The work done is**

- A 100 joules
- B 300 joules
- C 400 joules
- D 200 joules

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3 **A mass of 3 kilograms moves at 8 meters per second Its kinetic energy is one half times 3 times 64 joules Its kinetic energy is**

- A 96 joules
- B 48 joules
- C 144 joules
- D 192 joules

Understand It with Pulse | Flag a mistake

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

- A Double
- B Four times as large
- C Triple
- D Eight times as large

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5 **A mass of 2 kilograms is lifted 15 meters Use 10 meters per second squared for gravity The gain in gravitational potential energy is**

- A 150 joules
- B 450 joules
- C 300 joules
- D 600 joules

Understand It with Pulse | Flag a mistake

6 **A mass of 5 kilograms is lifted 4 meters Use 10 meters per second squared for gravity The gain in gravitational potential energy is**

- A 100 joules
- B 300 joules
- C 400 joules
- D 200 joules

Understand It with Pulse | Flag a mistake

7 **The net work done on an object equals its change in**

- A Kinetic energy
- B Potential energy only
- C Mass
- D Temperature only

Understand It with Pulse | Flag a mistake

8 **A machine does 600 joules of work in 12 seconds The power of the machine is**

- A 60 watts
- B 50 watts
- C 70 watts
- D 120 watts

Understand It with Pulse | Flag a mistake

9 **A motor does 900 joules of work in 15 seconds The power of the motor is**

- A 30 watts
- B 45 watts
- C 60 watts
- D 75 watts

Understand It with Pulse | Flag a mistake

10 **A device has a useful output of 240 joules from an input of 400 joules The efficiency of the device is**

- A 40 percent
- B 80 percent
- C 160 percent
- D 60 percent

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11 **A mass of 6 kilograms moves at 5 meters per second Its momentum is**

- A 30 kilogram meters per second
- B 11 kilogram meters per second
- C 35 kilogram meters per second
- D 60 kilogram meters per second

Understand It with Pulse | Flag a mistake

12 **A force of 20 newtons acts for 3 seconds The impulse delivered is**

A 23 newton seconds

B 60 newton seconds

C 17 newton seconds

D 80 newton seconds

Understand It with Pulse | Flag a mistake

13 **A mass of 4 kilograms changes velocity by 6 meters per second The change in its momentum is**

A 10 kilogram meters per second

B 28 kilogram meters per second

C 24 kilogram meters per second

D 48 kilogram meters per second

Understand It with Pulse | Flag a mistake

14 **A cart of mass 3 kilograms at 4 meters per second sticks to an identical cart at rest The speed of the combined carts is**

- A 1 meter per second
- B 3 meters per second
- C 4 meters per second
- D 2 meters per second

Understand It with Pulse | Flag a mistake

15 **A spring with spring constant 100 newtons per meter is stretched 0.2 meters Its elastic potential energy is one half times 100 times 0.04 joules Its elastic potential energy is**

- A 2 joules
- B 1 joule
- C 4 joules
- D 10 joules

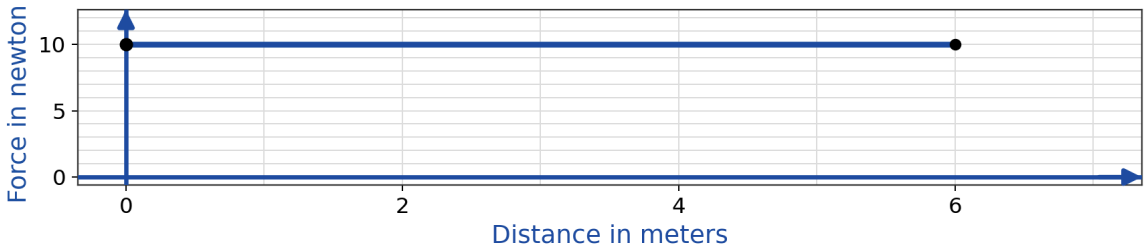
Understand It with Pulse | Flag a mistake

16 **A mass of 10 kilograms is lifted 2 meters at a steady speed Use 10 meters per second squared for gravity The work done against gravity is**

- A 20 joules
- B 200 joules
- C 100 joules
- D 400 joules

Understand It with Pulse | Flag a mistake

17 **The graph shows force against distance for a moving object The work done is**



A 10 joules

B 16 joules

C 60 joules

D 6 joules

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18 **Use 10 meters per second squared for gravity A ball is dropped from a height of 20 meters Its speed just before hitting the ground is**

A 10 meters per second

B 30 meters per second

C 40 meters per second

D 20 meters per second

Understand It with Pulse | Flag a mistake

19 **Use 10 meters per second squared for gravity A ball is dropped from a height of 5 meters Its speed just before hitting the ground is**

- A 10 meters per second
- B 5 meters per second
- C 15 meters per second
- D 20 meters per second

Understand It with Pulse | Flag a mistake

20 **A pendulum swings freely with no friction Its kinetic energy is greatest at the**

- A Highest point on the left
- B Lowest point of the swing
- C Highest point on the right
- D Point where it stops

Understand It with Pulse | Flag a mistake

21 **A force acts at right angles to the motion of an object The work done by that force is**

A Positive and large

B Negative and large

C Zero

D Equal to the force

Understand It with Pulse | Flag a mistake

22 **In a closed system with no outside impulse Total momentum is**

A Lost

B Gained

C Doubled

D Conserved

Understand It with Pulse | Flag a mistake

23 **A car brakes and its kinetic energy falls from 800 joules to 200 joules The work done by the brakes is**

- A 600 joules
- B 800 joules
- C 200 joules
- D 1000 joules

Understand It with Pulse | Flag a mistake

24 **A motor does 720 joules of work in 8 seconds What is its power in watts**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **A mass of 2 kilograms moves at 10 meters per second What is its kinetic energy in joules**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. C
2. D
3. A
4. B
5. C
6. D
7. A
8. B
9. C
10. D
11. A
12. B
13. C
14. D
15. A
16. B
17. C
18. D
19. A
20. B
21. C
22. D
23. A
24. 90
25. 100

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