Class 10_Work-Energy_Objective Test

Total points 16/20

Physics
Marks:

Work, Energy and Power

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Choose

Option 1

Option 1

Option 2

✓ 1. The correct sequence for the formula for work done when force is in (i) the direction of displacement and (ii) at an angle to direction of displacement is: * 1/1

- ○ F x s cos θ ; F x s
- ◉ F x s ; F x s cos θ ✓

Feedback

(i) F x s, (ii) F x s cos θ

2. Identify the correct symbol for SI unit of the following: *

	kWh	HP	W	J	Score	
Work	☐	☐	☐	☑	1/1	✓
Power	☐	☐	☑	☐	1/1	✓
Electrical energy	☐	☑	☐	☐	0/1	✗
Mechanical unit of Power	☑	☐	☐	☐	0/1	✗

Correct answers

	kWh	HP	W	J
Electrical energy	☑	☐	☐	☐
Mechanical unit of Power	☐	☑	☐	☐

3. Identify the correct energy conversion in the following: *

	electrical to sound energy	chemical to light and heat	heat to mechanical	electric to light and heat	Score	
Burning of candle	☐	☑	☐	☐	1/1	✓
Steam engine	☐	☐	☑	☐	1/1	✓
Loud speaker	☑	☐	☐	☐	1/1	✓
glowing electric bulb	☐	☐	☐	☑	1/1	✓

✓ 4. Rajan exerts a force of 150 N in pulling a cart at a constant speed of 10 m/s. The power exerted is: * 2/2

- ○ 15 W
- ◉ 1500 W ✓
- ○ 1/15 W

Feedback

Power exerted = Force x Av speed (1/2 marks); P = 150 x 10 (1/2 mark); P = 1500 W (1/2 + 1/2)

✓ 5. Work done by the moon when it revolves around the earth is: * 1/1

- --1
- (•) 0 ✓
- +1

✗ 6. X carries a box on his head and climbs up a slope while Y walks the same distance with an identical box on a levelled ground. More work against the force of gravity was done by: * 0/2

- X
- (•) Y ✗

Correct answer

- (•) X

✓ 7. A moving body has a weight of 400 N and its KE is 500 J. Calculate the velocity of the moving body (g= 10 m/s-2 * 3/3

- 400 m/s
- 0.6 m/s
- (•) 5 m/s ✓

Feedback

W= 400 N ; g= 10 m/s-2; W=mg; m= 40 kg. KE = 1/2 mv^2 by calculation v = 5 m/s

✓ 8. 1 HP = _____W * 1/1

- 476 W
- 746 W ✓
- 0.746 W
- 0.476 W

✓ 9. A ball of 200 g falls from a height of 5 m. Its KE when it just reaches the ground will be * 2/2

- 9800 J
- 0 J
- 9.8 J ✓
- 980 J

Feedback

When ball reaches the ground all PE changes to KE. O KE = mgh = 200/1000 x 9.8 x 5 = 9.8 J