

Energy, Work & Power

Question Paper

Course	CIE IGCSE Physics
Section	1. Motion, Forces & Energy
Topic	Energy, Work & Power
Difficulty	Medium

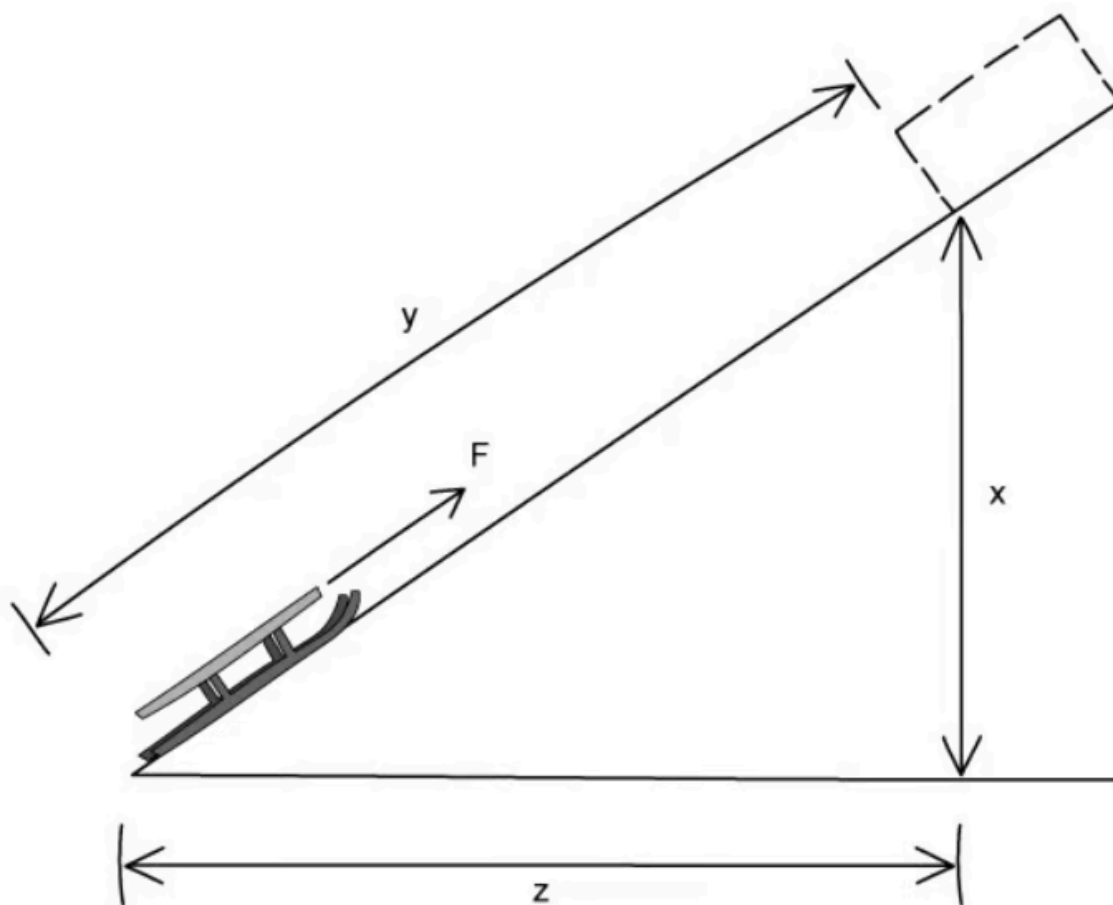
Time Allowed 10

Score /7

Percentage /100

Question 1

A sledge is pushed up a hill with a force, F .



The work done on the sledge depends on the force applied and on a distance moved.

Which distance?

- A. x
- B. y
- C. z
- D. $x + z$

[1 mark]

Question 2

The law of conservation of energy states that energy cannot be created or destroyed, it can only be transferred from one store to another.

Which of the following statements is true?

- A.** The useful energy and wasted energy transferred away from a system will be equal to the total energy transferred to the system.
- B.** The useful energy of a system will be equal to the wasted energy of a system.
- C.** The total energy transferred to a system will be equal to the useful energy transferred away from a system.
- D.** The total energy transferred to a system will be equal to the wasted energy transferred away from a system.

[1 mark]

Question 3

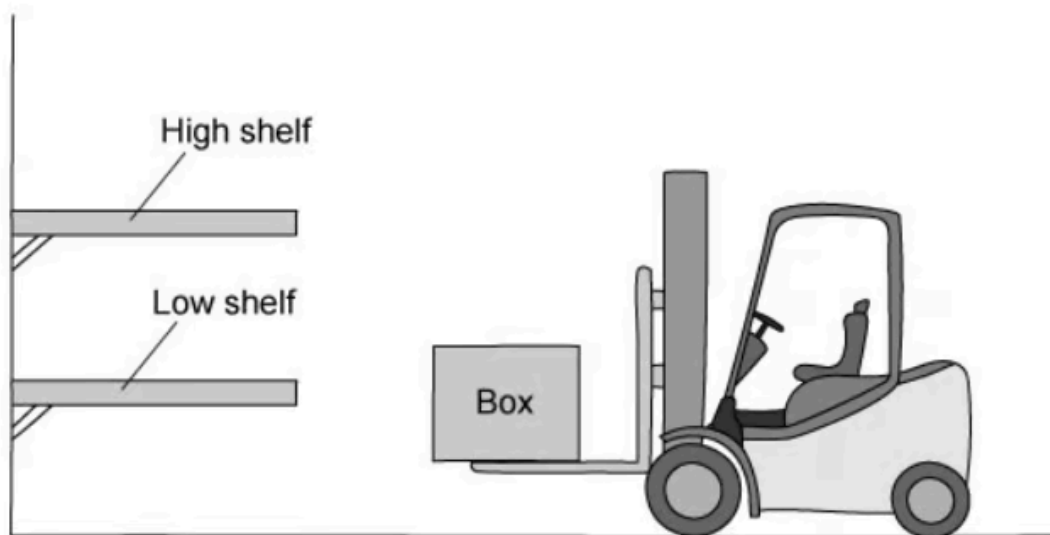
Which of the following energy transfers is most efficient?

- A.** Useful energy out = 70%
- B.** Wasted energy out = 45%
- C.** Useful energy out = 35%
- D.** Wasted energy out = 25%

[1 mark]

Question 4

A fork lift truck lifts a heavy box onto a shelf.



Which action requires the greatest power output from the fork lift truck.

- A. Lifting the box from the ground to the high shelf slowly
- B. Lifting the box from the ground to the high shelf quickly
- C. Lifting the box from the low shelf to the high shelf quickly
- D. Lifting the box from the low shelf to the high shelf slowly

[1 mark]

Question 5

A trolley is pushed with a force that causes it to move a certain distance. It moves in the direction it is pushed.

Which row in the table represents the combination of force and distance that means the smallest amount of work is done on the trolley?

	Force / N	Distance moved / m
A	20	20
B	40	10
C	50	6.0
D	70	4.0

[1 mark]

Question 6

Four different electric bicycles are driven along a road.

The work done by their motor, and the time taken to do that work is shown in the table below.

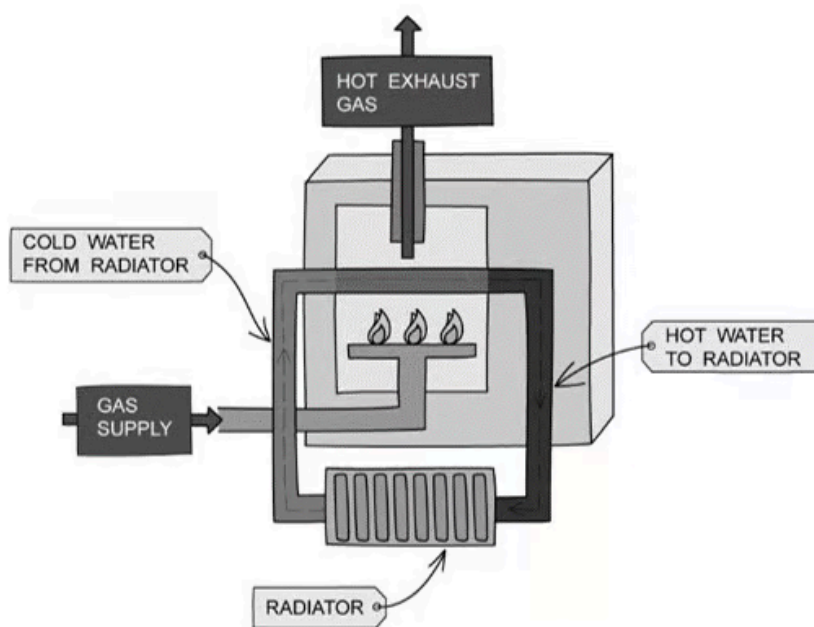
Which of the electric bicycles produces the most power?

	Work done / J	Time taken / s
A	10 000	20
B	20 000	40
C	400 000	400
D	2000	1

[1 mark]

Question 7

The image below shows a simplified layout of a non-condensing gas boiler that is typically used to heat houses in the United Kingdom.



Which option correctly describes the energy transfers taking place in the boiler?

- A. Energy from the chemical store of the fuel decreases as the thermal store of the water increases and the thermal store of the surroundings increases
- B. Energy from the thermal store of the fuel decreases as the nuclear store of the water increases and the thermal store of the surroundings decreases
- C. Energy from the nuclear store of the fuel decreases as the thermal store of the water increases and the thermal store of the surroundings increases
- D. Energy from the electrostatic store of the fuel decreases as the chemical store of the water increases and the nuclear store of the surroundings increases

[1 mark]