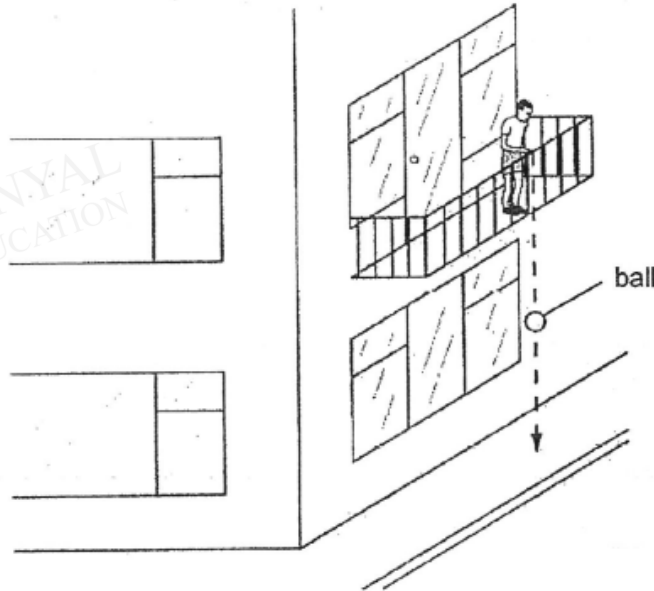


O Level Combined Physics MCQs

Energy, Work Done and Power Test 1.0

Q1

A ball is held over the edge of a balcony. The ball is released and falls to a concrete path below, before bouncing back up.



Which row shows the correct order of the energy transformations?

- A chemical energy → elastic energy → kinetic energy → gravitational potential energy
- B chemical energy → kinetic energy → gravitational potential energy → kinetic energy
- C gravitational potential energy → elastic energy → kinetic energy → chemical energy
- D gravitational potential energy → kinetic energy → elastic energy → kinetic energy

Q2

A worker is lifting boxes of identical weight from the ground onto a moving belt. At first, it takes him 2 s to lift each box. Later in the day, it takes him 3 s. Which statement is correct?

- (A) Later in the day, less work is done in lifting each box.
- (B) Later in the day, more work is done in lifting each box.
- (C) Later in the day, less power is developed in lifting each box.
- (D) Later in the day, more power is developed in lifting each box.

Q3

A crane lifts a load of 600 kg through a vertical distance of 15 m in 0.5 min.

Taking gravitational field strength as 10 N/kg, what is the average useful power during this operation?

- A 200 W B 400 W C 3 000 W D 12 000 W

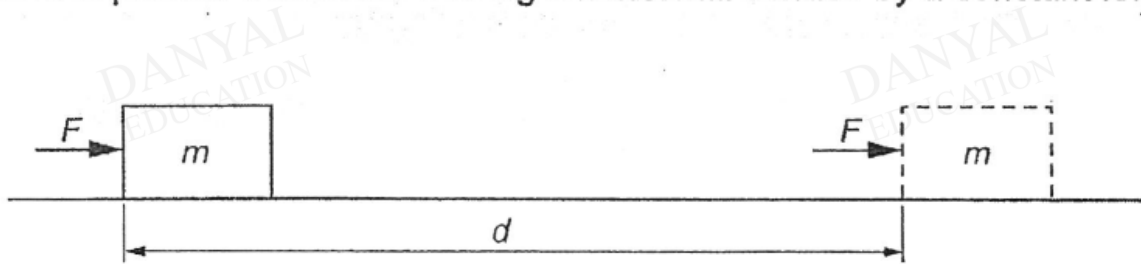
Q4

A crane lifts a load of 500 kg at a constant speed of 5 m/s.
Calculate the power developed by the crane.

- A 0 W B 2500 W C 5000 W D 25000 W

Q5

Mass m is pushed a distance d along a horizontal surface by a constant force F .

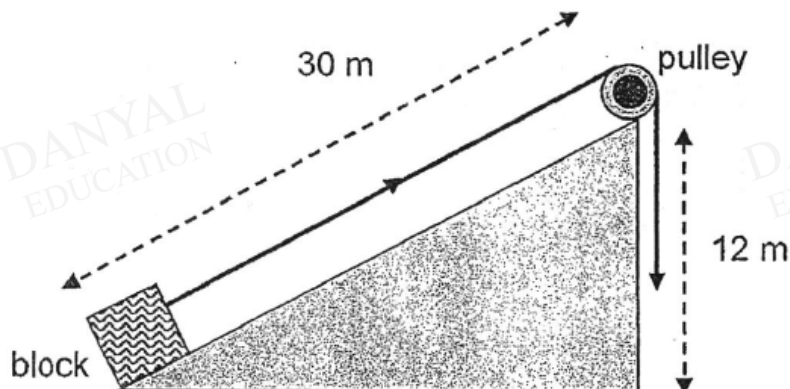


What quantities must be known in order to calculate the work done by the force?

- A d and F only
B d and m only
C F and m only
D d , F and m

Q6

A block of mass 40 kg is pulled by a force of 300 N along a 30 m slope to a height of 12 m.

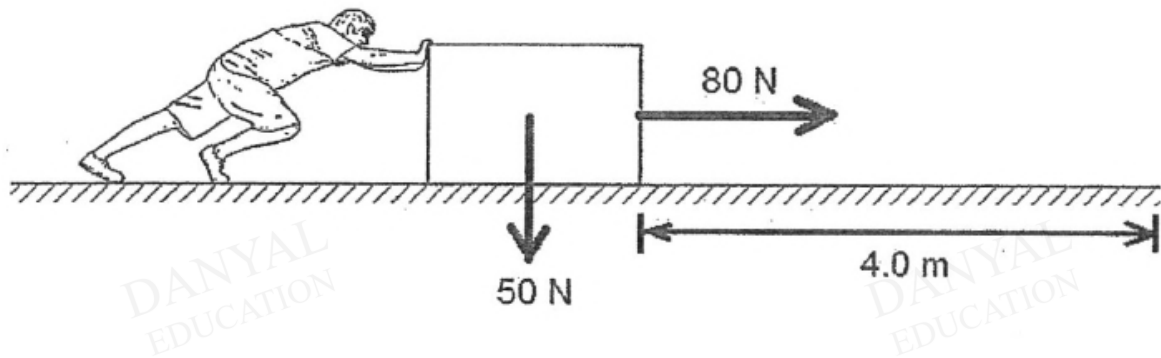


How much work is done against friction?

- A 4 200 J B 4 800 J C 9 000 J D 13 800 J

Q7

A man pushes a box weighing 50 N across a floor. He exerts a force of 80 N and the box moves 4.0 m in 5.0 seconds.

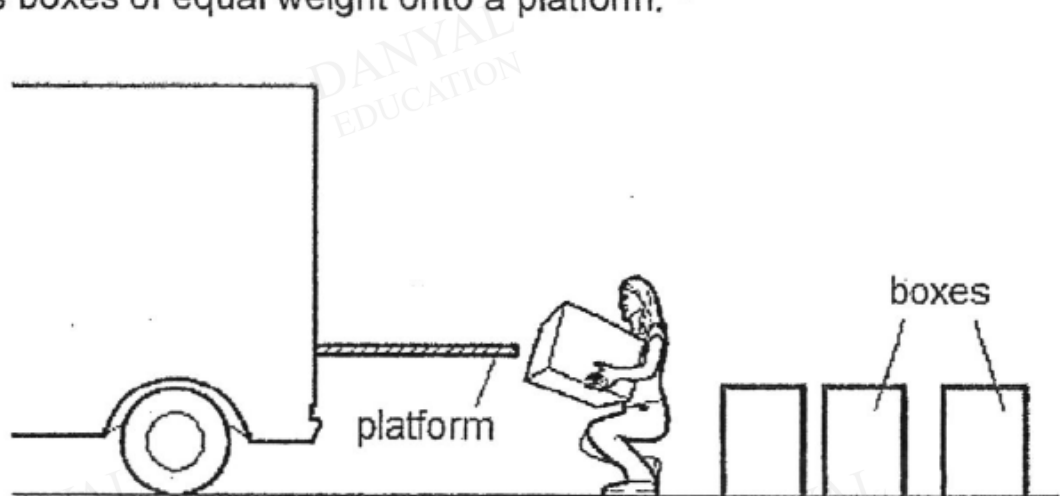


What is the average power developed by the man?

- A 40 W B 64 W C 1 000 W D 1 600 W

Q8

A person lifts boxes of equal weight onto a platform.



Which quantity would **not** affect the total work done by the person?

- A the time taken to lift the box
B the number of boxes lifted
C the mass of the boxes
D the height of the platform above the ground

Q9

A man runs up a flight of stairs in 3 seconds. If the man weighs 600 N and the stairs is 4 m high, what is the power exerted by the man in raising himself?

- A** 2 400 W **B** 450 W **C** 200 W **D** 800 W

Q10

A stone of weight 100 N is thrown vertically upwards from the ground with an initial kinetic energy of 160 J. Ignoring air resistance, the kinetic energy, the gain in potential energy and the work done against gravity when the stone is at 1.00m above the ground will be

| | kinetic energy | gain potential energy | work done |
|----------|----------------|-----------------------|-----------|
| A | 60 J | 60 J | 60 J |
| B | 60 J | 100 J | 60 J |
| C | 60 J | 100 J | 100 J |
| D | 100 J | 160 J | 100 J |

Answers

Energy, Work Done and Power Test 1.0

Q1 D

Q2 C

Q3 C

Q4 D

Q5 A

Q6 A

Q7 B

Q8 A

Q9 D

Q10 C

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