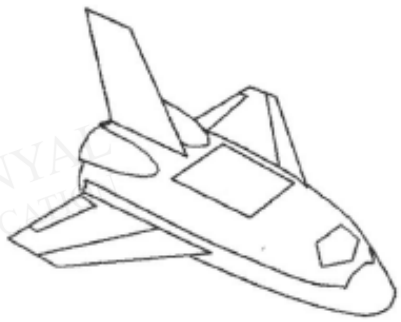
O Level Pure Physics MCQs

Forces Test 1.0

Q1

If the engine of a space craft travelling in empty space is turned off, the space craft will



A continue to move with constant acceleration.
B continue to move with constant deceleration.
C continue to move with constant velocity.
D stop moving.

Q2

A man applied a force, F, to pull a box across the floor at a constant speed. If the man now uses twice the amount of the force to pull the box across the same floor, the box will move

A at the same constant speed.
B at a higher constant speed.
C with a uniform acceleration.
D with an increasing acceleration.

Q3

The weight of an inflated balloon is 200 N. The balloon rises at a constant speed of 2.0 m/s. What is the resultant force acting on the balloon while it is rising?

A 0 N B 100 N C 200 N D 400 N

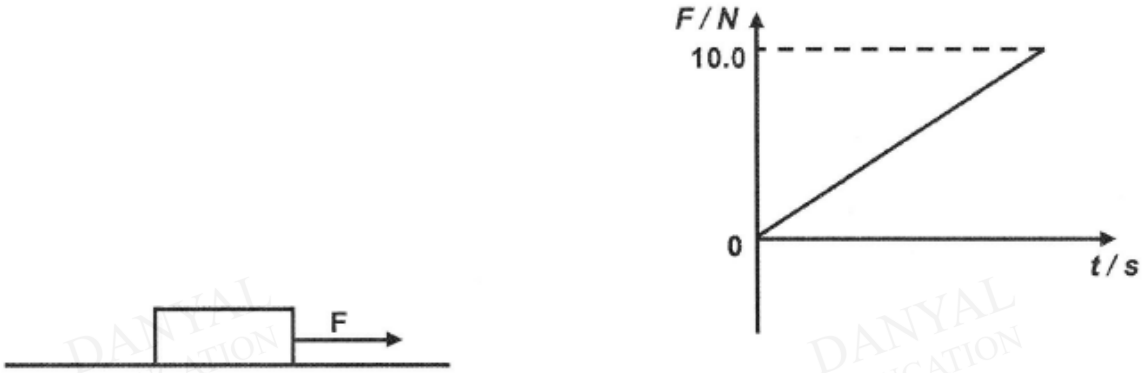
Q4

A car of mass 700 kg is capable of exerting a maximum engine force of 5000 N. When travelling along a typical road, it has a maximum acceleration of 5.0 m/s^2. What is the total resistive force acting on the car?

A 36 N B 1500 N
C 3500 N D 5000 N

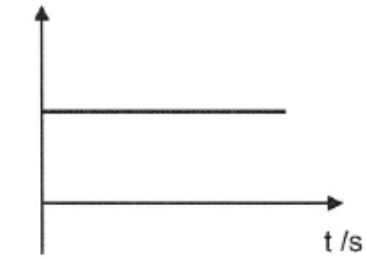
Q5

The diagram below shows a wooden block initially at rest on a smooth horizontal surface. A pulling force **F** acting on the wooden block varies as shown in the graph.

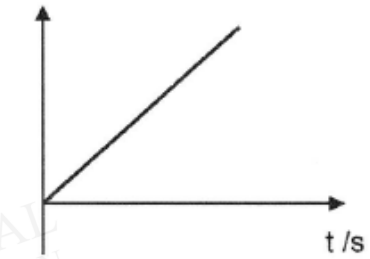


Which graph best describes the motion of the wooden block?

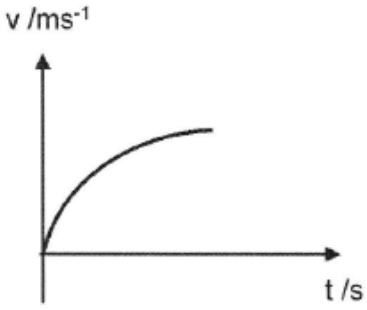
A



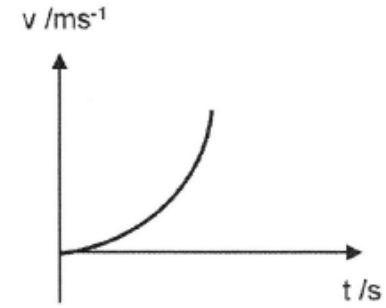
B



C



D



Q6

When a 2 kg block of wood is pushed along a surface with its side measuring 5 cm x 10 cm in contact with the table, the frictional force measured is *f*. When the same 2 kg block of wood is pushed on its other side measuring 1 cm x 5 cm, what is the frictional force measured?

A 1/5 *f* **B** *f* **C** 5 *f* **D** 25 *f*

Q7

An object released from the top of building falls through the air with terminal velocity.

How many statement(s) is/are correct as the book continues to fall?

- The air resistance acting on the book will increase.
- The book will undergo uniform acceleration.
- The book will increase in velocity.
- The forces acting on the book are balanced.

A 1

B 2

C 3

D 4

Q8

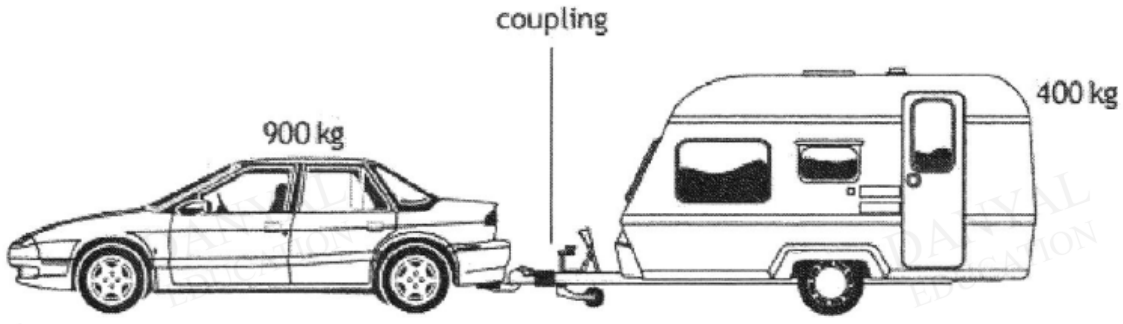
A cyclist is travelling at 10 m/s along a level road. The cyclist applies the brakes and comes to rest in a time of 5.0 s. The combined mass of the cycle and cyclist is 80 kg.

What is the braking force applied at the brakes?

A 80 N **B** 160 N **C** 1600 N **D** 4000 N

Q9

A car of mass 900 kg pulls a caravan of mass 400 kg along a straight, horizontal road with an acceleration of $2{\cdot}0\,m/s^2$.



Assuming that the frictional forces on the caravan are negligible, the tension in the coupling between the car and the caravan is

A 400 N **B** 500 N **C** 800 N **D** 1800 N

Q10

An object is falling under gravity with terminal velocity.
Which statement below is correct?

A The air resistance acting against the object at this instant is negligible.
B The object falls with zero acceleration at this instant.
C The object slowed down before it achieves terminal velocity.
D No force acts on the object at this instant.

Answers

Forces Test 1.0

Q1 C

Q2 C

Q3 A

Q4 B

Q5 D

Q6 B

Q7 A

Q8 B

Q9 C

Q10 B