Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Forces (Low Demand Questions)

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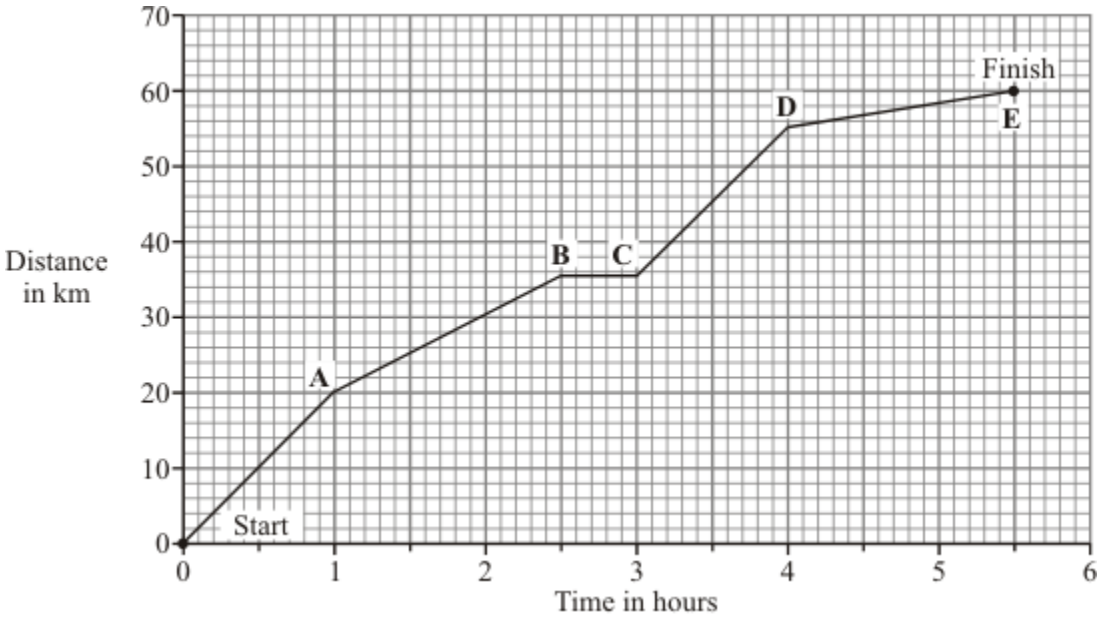
Name of the Student:_____
Max. Marks : 25 Marks **Time : 25 Minutes**

Q1.

A horse and rider take part in a long distance race. The graph shows how far the horse and rider travel during the race.



(a) What was the distance of the race?

distance = _____ km

(1)

(b) How long did it take the horse and rider to complete the race?

_____

(1)

(c) What distance did the horse and rider travel in the first 2 hours of the race?

distance = _____ km

(1)

(d) How long did the horse and rider stop and rest during the race?

_____

(1)

(e) Not counting the time it was resting, between which two points was the horse moving the slowest?

_____ and _____

Give a reason for your answer.

_____

_____

(2)

(Total 6 marks)

Q2.

(a) The weightlifter in the picture has lifted a weight of 2250 newtons above his head. The weight is held still.

(i) In the box are the names of three forms of energy.

gravitational potential	kinetic	sound

Which **one** of these forms of energy does the weight have?

_____

(1)

(ii) What force is used by the weightlifter to hold the weight still?

Size of force = _____ N

Give a reason for your answer _____

_____

_____

(2)

(b) To lift the weight, the weightlifter does 4500 joules of work in 3.0 seconds.

Calculate the power developed by the weightlifter. Show clearly how you work out your answer.

_____

_____

Power = _____ watts

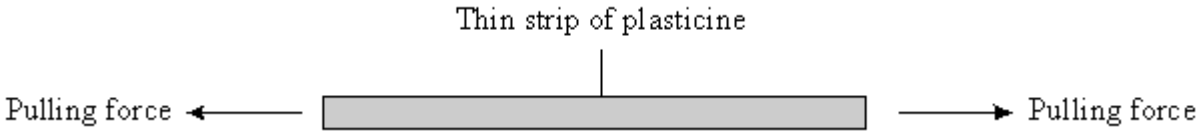
(2)

(Total 5 marks)

Q3.

(a) The diagrams below show pairs of forces acting on different objects. In each case describe what happens when the forces are increased. Then describe what happens when the forces are removed.

(i)



When the forces are increased

_____

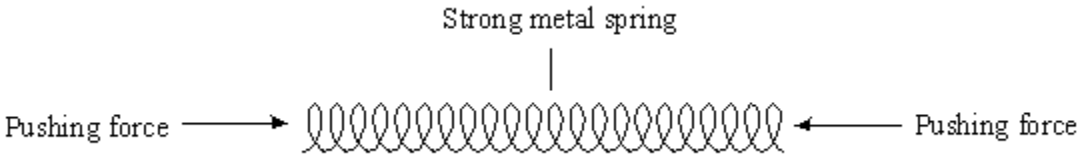
_____

When the forces are removed

_____

_____

(ii)



When the forces are increased

_____

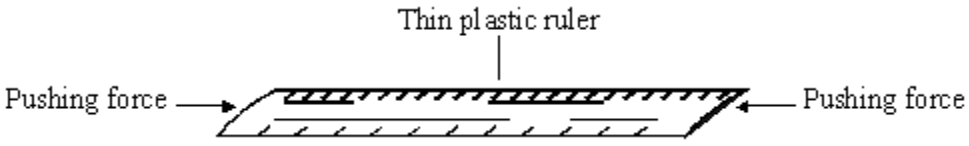
_____

When the forces are removed

_____

_____

(iii)



When the forces are increased

_____

_____

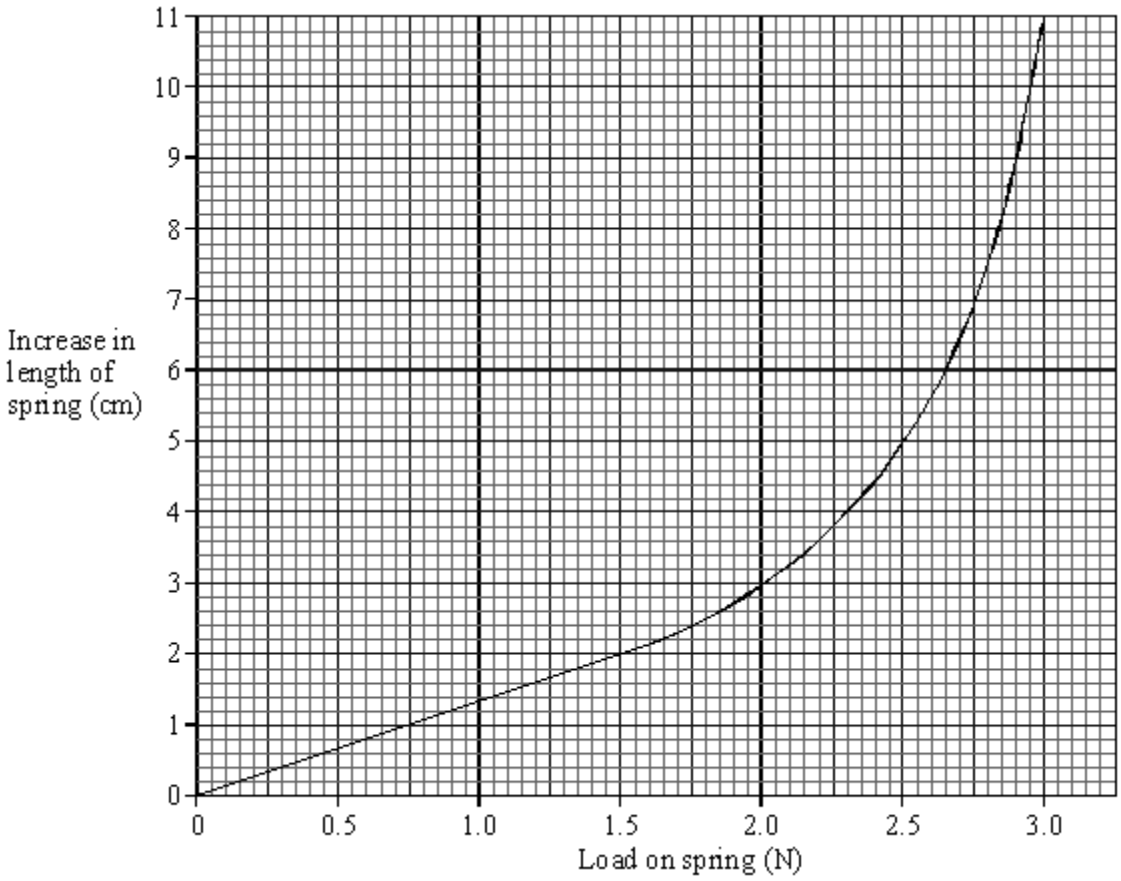
When the forces are removed

_____

_____

(6)

(b) The graph shows the increase in length of a spring against **load** (force).



The length of the spring with no load was 15 cm.

Use the graph to find:

(i) The load needed to produce an increase in length of 2 cm.

_____

(ii) The increase in length produced by a load of 2.3 N.

_____

(iii) The **length** of the spring when the load was 2.3 N.

_____

(3)

(Total 9 marks)

Q4.

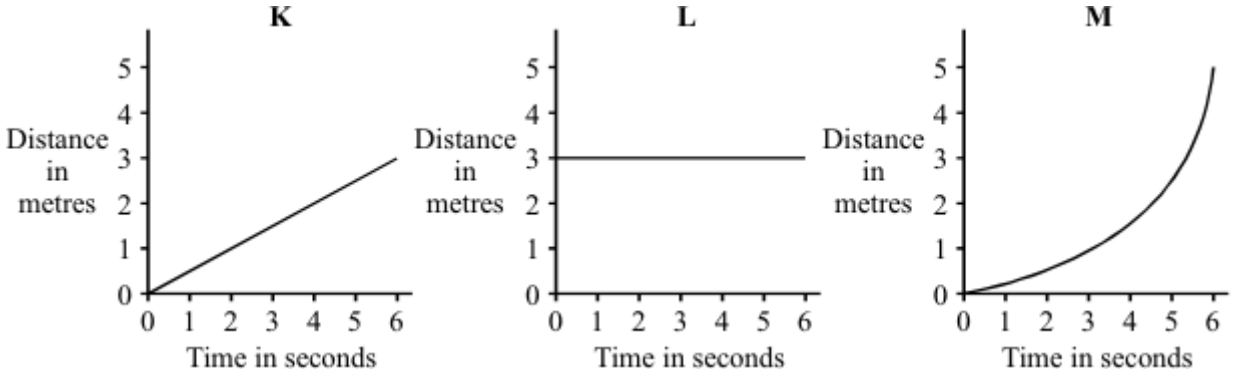
(a) A shopping trolley is being pushed at a constant speed. The arrows represent the horizontal forces on the trolley.

(i) How big is force **P** compared to force **F**?

_____

(1)

(ii) Which **one** of the distance-time graphs, **K**, **L** or **M**, shows the motion of the trolley? Draw a circle around your answer.



(1)

(b) Complete the sentence by crossing out the **two** words in the box that are wrong.

Acceleration is the rate of change of

energy.
speed.
velocity.

(1)

(c) Three trolleys, **A**, **B** and **C**, are pushed using the same size force. The force causes each trolley to accelerate.

Which trolley will have the smallest acceleration?

_____

Give a reason for your answer.

_____

(2)
(Total 5 marks)