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

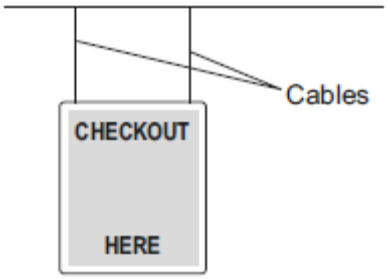
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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

A sign hangs from the ceiling using two cables, as shown in **Figure 1**.

Figure 1



(a) On **Figure 1**, mark the centre of mass of the sign using an X.

(1)

(b) Use the correct answer from the box to complete the sentence.

concentrated	**greatest**	**pivoted**

The centre of mass of an object is the point where the mass appears

to be _____ .

(1)

(c) A breeze made the sign swing forwards and backwards like a pendulum.
The frequency of oscillations of the sign was 2 hertz.

Calculate the periodic time for the sign.

_____

_____

_____

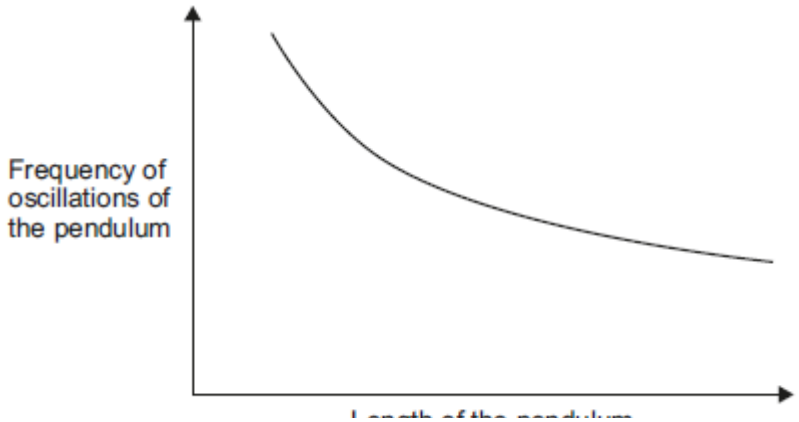
Periodic time = _____ seconds

(2)

(d) **Figure 2** is a sketch graph showing how the frequency of the oscillations of a pendulum changes as the length of the pendulum is increased.

Figure 2

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Give **one** way the sign could be made to swing with a lower frequency.

Use **only** the information in the sketch graph.

_____

_____

(1)

(Total 5 marks)

Q2.

A number of different forces act on a moving vehicle.

(a) A car moving at a steady speed has a driving force of 3000 N.

(i) What is the value of the resistive force acting on the car?

Tick (✓) **one** box.

	Tick (✓)
2000 N	
3000 N	
4000 N	

(1)

(ii) What causes most of the resistive force?

Tick (✓) **one** box.

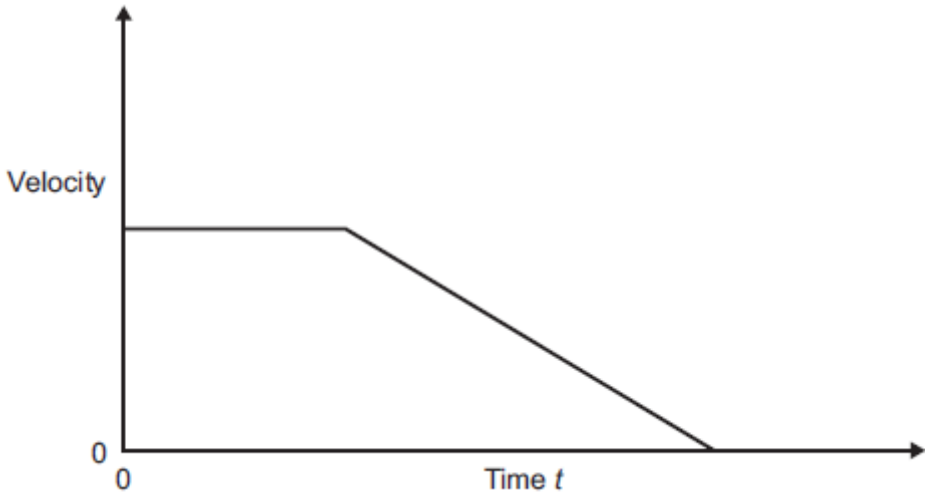
	Tick (✓)
Air resistance	
Faulty brakes	
Poor condition of tyres	

(1)

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(b) A car is moving along a road. The driver sees an obstacle in the road at time $t = 0$ and applies the brakes until the car stops.

The graph shows how the velocity of the car changes with time.



(i) Which feature of the graph represents the negative acceleration of the car?

Tick (✓) **one** box.

	Tick (✓)
The area under the graph	
The gradient of the sloping line	
The intercept on the y-axis	

(1)

(ii) Which feature of the graph represents the distance travelled by the car?

Tick (✓) **one** box.

	Tick (✓)
The area under the graph	
The gradient of the sloping line	
The intercept on the y-axis	

(1)

(iii) On a different journey, the car is moving at a **greater** steady speed.

The driver sees an obstacle in the road at time $t = 0$ and applies the brakes until the car stops.

The driver's reaction time and the braking distance are the same as shown the graph above.

On the graph above draw another graph to show the motion of the car.

(3)

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(c) **In this question you will be assessed on using good English, organising information clearly and using specialist terms where appropriate.**

Thinking distance and braking distance affect stopping distance.

Explain how the factors that affect thinking distance and braking distance affect stopping distance.

(6)

(Total 13 marks)

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