Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : Motion And Forces

Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Q1.

Figure 4 shows a car travelling on a motorway.

A passenger wants to check the accuracy of the speedometer of the car.
The car is travelling at a constant speed.
The passenger has a stopwatch.

The lamp posts are 40 m apart.

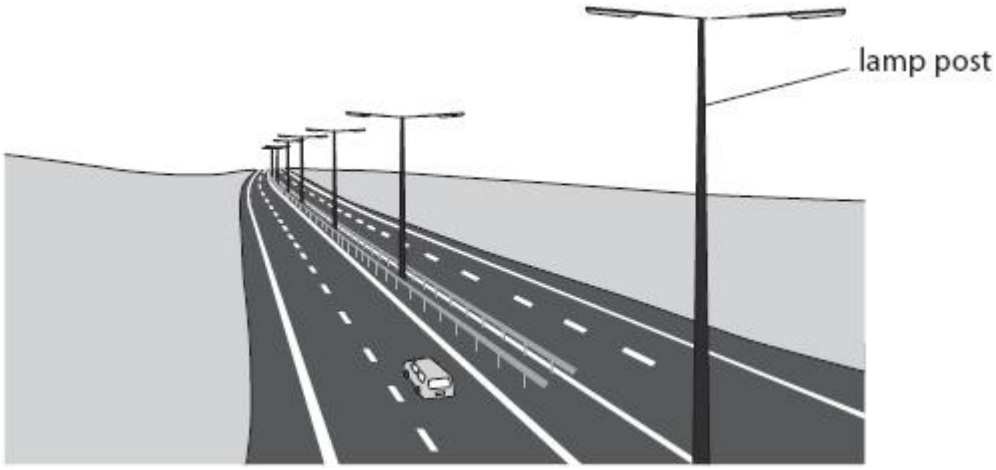

Figure 4

Describe how the passenger could determine the speed of the car as accurately as possible.

(3)

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(Total for question = 3 marks)

Q2.

A student lifts a toy car from a bench and places the toy car at the top of a slope as shown in Figure 2.

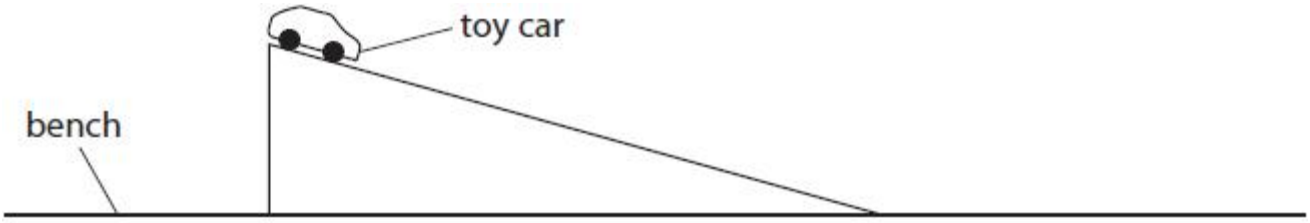

Figure 2

The student lets the toy car roll down the slope.

Describe how the student could find, by experiment, the speed of the toy car at the bottom of the slope.

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(Total for question = 4 marks)

Q3.

Describe how the student could extend the investigation to determine the average speed of the trolley as it rolls back down the track.

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(Total for question = 3 marks)

Q4.

Figure 8 is a velocity/time graph for a lift moving upwards in a tall building.

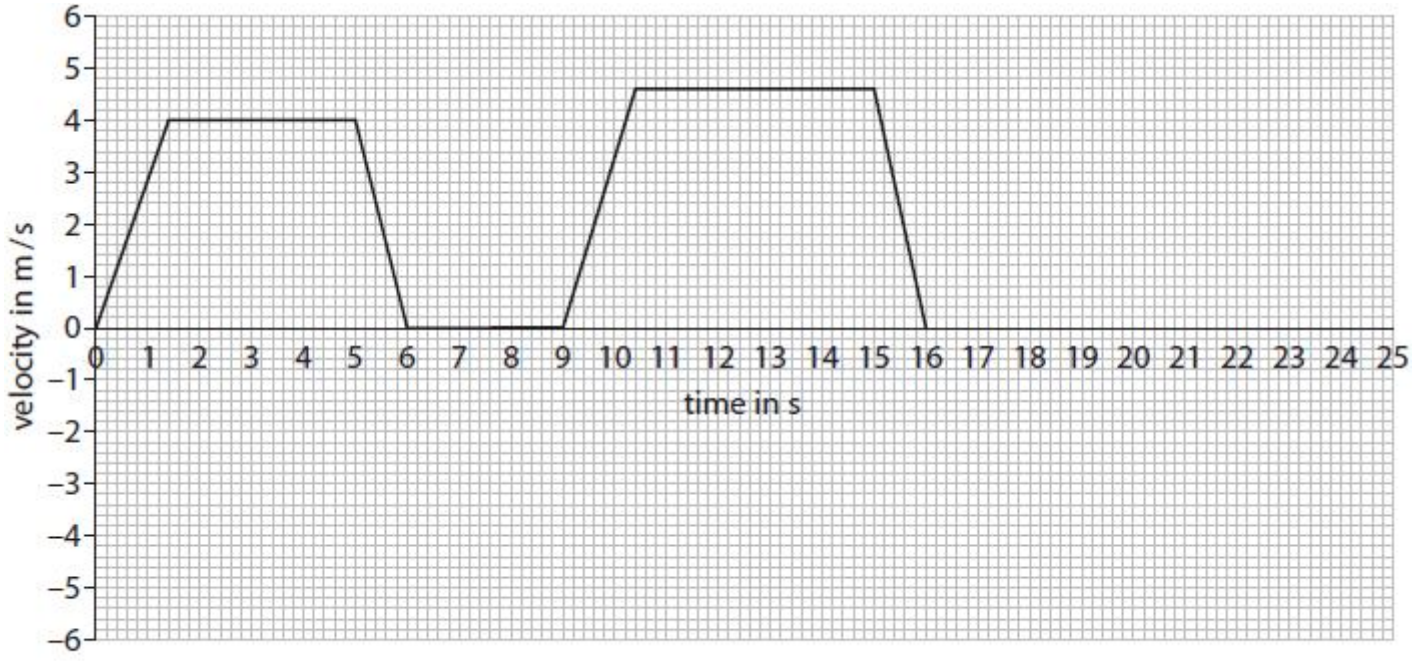


Figure 8

At 18 s, the lift starts to move downwards.

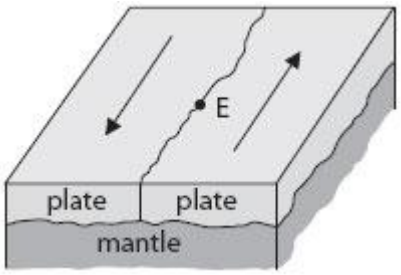
Sketch a line on the graph in Figure 8 to show the lift moving downwards after 18 s.

(1)

(Total for question = 1 mark)

Q5.

(a) The diagram shows part of the boundary between two tectonic plates.



(i) Complete the sentence by putting a cross (☒) in the box next to your answer.

The plates are being steadily pushed in opposite directions by

(1)

☒ **A** convection currents in the mantle

☒ **B** reflection of waves from the Earth's core

☒ **C** tsunami waves in the ocean

☒ **D** volcanic eruptions on the surface

(ii) An earthquake occurs.
Its epicentre is at the place marked E on the diagram.
Describe what happens at the plate boundary to cause this earthquake.

(2)

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(b) The earthquake causes seismic waves.

(i) S waves are one type of seismic wave. They travel at 0.65 km/s.
There is a seismometer 80 km away from point E.
Show that it takes about 2 minutes for the S waves from the earthquake to reach the seismometer.

(2)

(ii) P waves are another type of seismic wave.
They travel about 10 times more quickly than S waves.

Describe how scientists can use seismometer records of P and S waves to locate the epicentre.

(3)

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(iii) Seismic waves have a frequency of about 15 Hz.
P waves have a much smaller amplitude than S waves.

Some people claim that animals can detect an earthquake before people are aware of it.

Suggest an explanation for this.

(2)

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(Total for Question is 10 marks)