Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 3_ Conservation of Energy

Name of the Student:_____
Max. Marks : 10 Marks **Time : 10 Minutes**

Q1.

Figure 2 shows a way of projecting a small trolley up a sloping track.

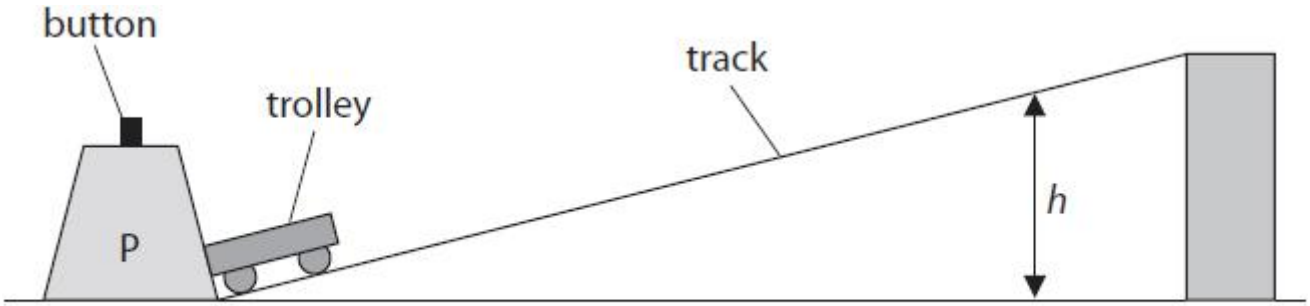

Figure 2

When the button is pressed, a spring is released in P that projects the trolley up the track.

The trolley travels up the track, stops and then rolls back down.

The spring in P always exerts the same force when projecting the trolley.

A student investigates how the mass of the trolley affects the maximum vertical height, *h*, reached by the trolley.

State the measurements the student should make to complete the investigation.

You should make use of the equipment shown in Figure 2 and any other equipment that is needed.

(4)

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(Total for question = 4 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 1.

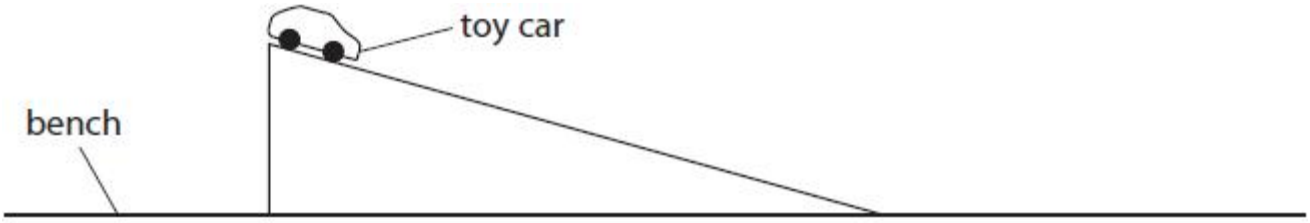

Figure 1

The student needs to develop the experiment to determine the loss in potential energy and the gain in kinetic energy as the toy car is rolling down the slope.

State the other measurements the student must make.

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(Total for question = 2 marks)

Q3.

Figure 2 shows a way of projecting a small trolley up a sloping track.

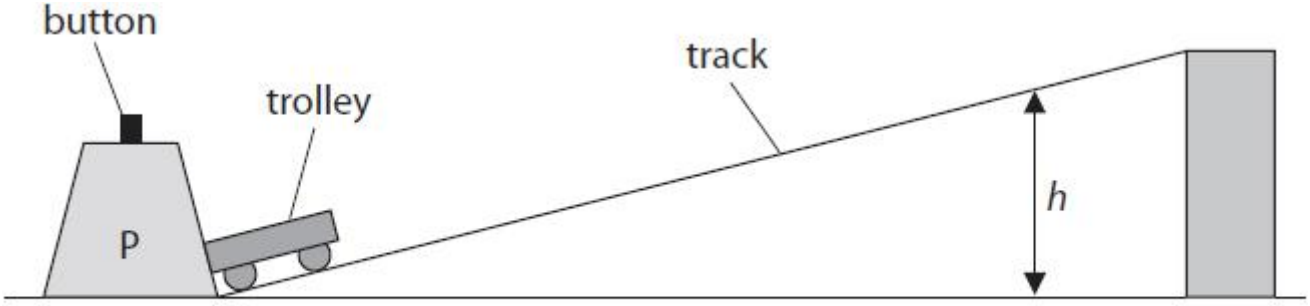

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Figure 3 is a graph of the student's results.

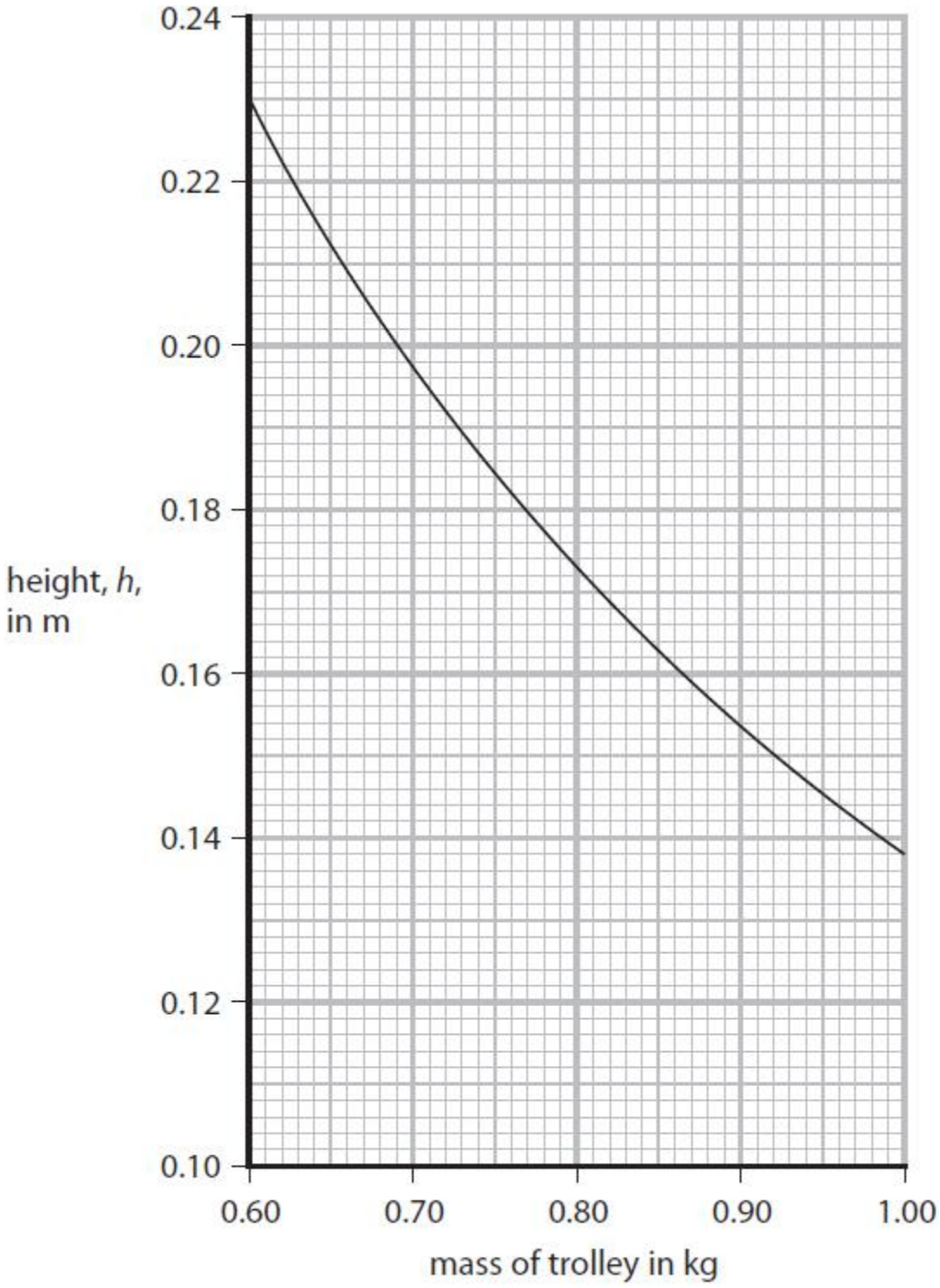

Figure 3

The student states that the energy transferred by the spring is the same each time it is used.

Use data from any two points on the graph in Figure 3 to support this statement.

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(Total for question = 3 marks)

Q4.

Answer the question with a cross in the box you think is correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Which statement describes conservation of energy in a closed system?

(1)

- ☐ **A** when there are energy transfers, the total energy reduces
- ☐ **B** when there are energy transfers, the total energy does not change
- ☐ **C** when there are no energy transfers, the total energy reduces
- ☐ **D** when there are no energy transfers, the total energy increases

(Total for question = 1 mark)