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

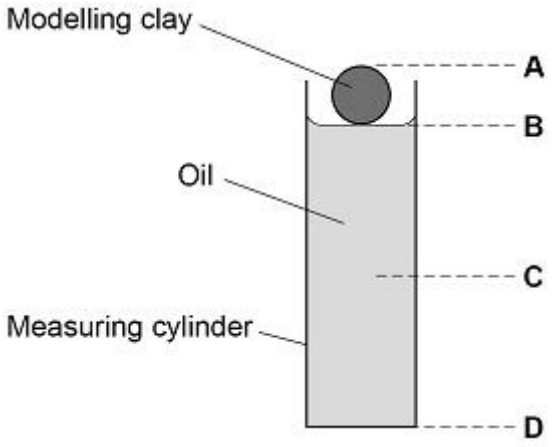
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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

A student dropped a piece of modelling clay into oil.

The diagram below shows the modelling clay just before it was dropped into the oil.



(a) What was the distance fallen by the modelling clay?

Tick (✓) **one** box.

- from A to C ☐
- from A to D ☐
- from B to C ☐
- from B to D ☐

(1)

(b) What measuring instrument should be used to measure the distance fallen?

_____

(1)

The student dropped four pieces of modelling clay, each with a different shape.

For each piece the student measured the time taken to fall the same distance through the oil.

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(c) The student removed each piece of modelling clay from the oil before dropping the next piece.

Suggest **one** reason why.

_____

_____

_____

(1)

The student repeated the measurements and calculated mean values.

The table below shows the results.

Shape	Time taken in seconds			
	Drop 1	Drop 2	Drop 3	Mean
 Sphere	47	38	41	42
 Cube	68	49	57	58
 Cylinder	34	37	34	**X**
 Cone	29	23	26	26

(d) Calculate value **X** in the table above.

_____

_____

_____

X = _____ s

(2)

(e) Each piece of modelling clay had the same mass.

Which shape in the table above had the smallest resistive force acting against it as it fell?

Tick (✓) **one** box.

Give **one** reason for your answer.

Cone ☐

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Cube ☐

Cylinder ☐

Sphere ☐

Reason _____

_____

(2)

(f) How would the time taken to fall change if the modelling clay was dropped through air instead of through oil?

Tick (✓) **one** box.

Time through air would be less. ☐

Time through air would be more. ☐

Time through air would be the same. ☐

(1)

(g) The mass of a piece of modelling clay was 0.050 kg.

gravitational field strength = 9.8 N/kg

Calculate the weight of the piece of modelling clay.

Use the equation:

weight = mass × gravitational field strength

_____

_____

Weight = _____ N

(2)

(h) Weight causes the modelling clay to fall through the oil.

Weight is a non-contact force.

Which of the following are also non-contact forces?

Tick (✓) **two** boxes.

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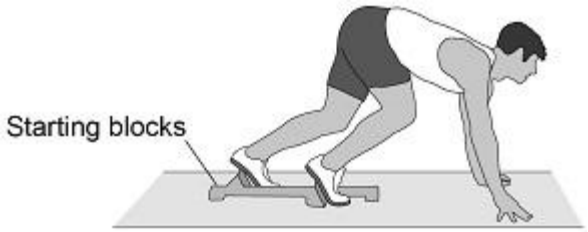
Air resistance	☐
Electrostatic force	☐
Friction	☐
Magnetic force	☐
Tension	☐

(2)
(Total 12 marks)

Q2.

Figure 1 shows an athlete on starting blocks waiting to start a 100 metre race.

Figure 1



(a) Complete the sentence.

Choose the answer from the box.

equal to	**greater than**	**less than**

The force from the athlete pushing backwards on the starting blocks

is _____ the force from the starting

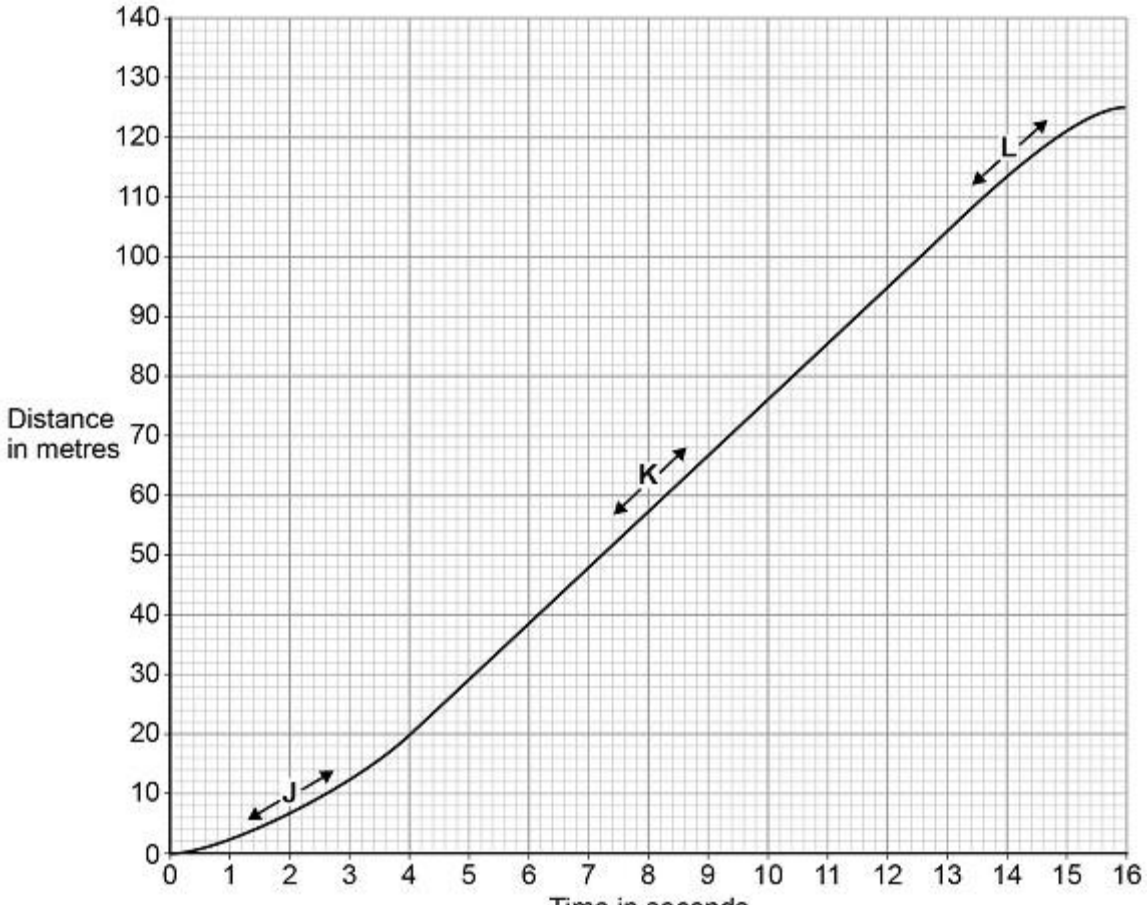
blocks pushing forwards on the athlete.

(1)

Figure 2 shows a distance-time graph for the athlete from the moment the race starts.

Figure 2

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(b) Three parts of the distance-time graph are labelled **J**, **K** and **L**.

Draw **one** line from **each** of the labels to the correct description of the athlete's motion for that part of the graph.

Labels	Description of motion
J	not moving
K	constant speed
L	decreasing speed
	increasing speed

(2)

(c) What distance does the athlete travel after the end of the race before stopping?

Distance = _____ m

(1)

(d) Calculate the average speed of the athlete between the start and finish of the 100 metre race.

Use the equation:

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$$\text{average speed} = \frac{\text{distance travelled}}{\text{time taken}}$$

_____

_____

_____

Average speed = _____ m/s

(2)

(e) The athlete runs faster than a typical person.

What is the average running speed of a typical person in metres per second?

Tick (✓) **one** box.

1.5 ☐

3.0 ☐

4.5 ☐

6.0 ☐

(1)

(Total 7 marks)

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