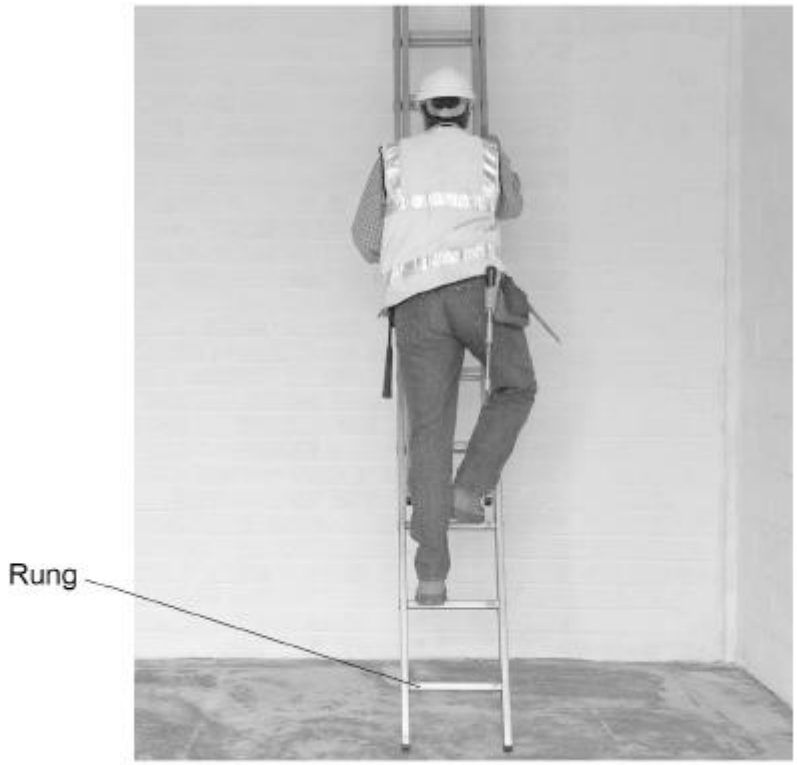
Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Forces (Low Demand Questions)

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

Q1.

The figure below shows an engineer climbing up a ladder.



The distance between each rung on the ladder is 30 cm.

(a) What is 30 cm in metres?

Tick (✓) **one** box.

0.030 m ☐ 0.30 m ☐ 3.0 m ☐ 30 m ☐

(1)

(b) The engineer has a weight of 710 N.

Calculate the work done when climbing up one rung of the ladder.

Use your answer to part (a) and the equation:

work done = force × distance

_____

_____

_____

Work done = _____ Nm

(2)

(c) The engineer climbs the ladder carrying some equipment.

Give the reason why carrying equipment increases the work done by the engineer when climbing the ladder.

_____

_____

(1)

(d) The engineer is stationary at the top of the ladder.

Which energy stores of the engineer increase due to the engineer climbing the ladder?

Tick (✓) **two** boxes.

Chemical	☐
Elastic potential	☐
Gravitational potential	☐
Kinetic	☐
Thermal	☐

(2)

Use the Physics Equations Sheet to answer parts (e) and (f).

(e) Write down the equation that links gravitational field strength (*g*), mass (*m*) and weight (*W*).

_____

_____

(1)

(f) The engineer has a weight of 710 N.

gravitational field strength = 9.8 N/kg

Calculate the mass of the engineer.

Give your answer to 2 significant figures.

_____

Mass (2 significant figures) = _____ kg

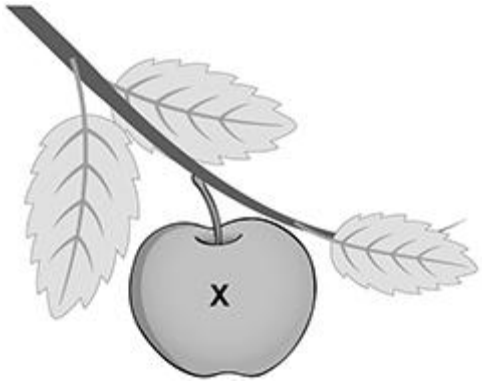
(4)

(Total 11 marks)

Q2.

The figure below shows an apple hanging from a tree.

The **X** marks the centre of mass of the apple.



(a) Draw an arrow on the figure above to represent the weight of the apple.

(1)

(b) The apple has a mass of 0.150 kg

gravitational field strength = 9.8 N/kg

Calculate the weight of the apple.

Use the equation:

weight = mass × gravitational field strength

Weight = _____ N

(2)

(c) The apple in above diagram is stationary.

Why is the apple stationary?

Tick (✓) **one** box.

The resultant force on the apple is downwards. ☐

The resultant force on the apple is upwards. ☐

The resultant force on the apple is zero. ☐

(1)

When the apple is ripe it falls from the tree and accelerates towards the ground.

(d) Why does the apple accelerate?

Tick (✓) **one** box.

The resultant force on the apple is downwards. ☐

The resultant force on the apple is upwards. ☐

The resultant force on the apple is zero. ☐

(1)

(e) The acceleration of the apple is 9.8 m/s^2

The velocity of the apple changes from 0 to 4.9 m/s

Calculate the time taken for the apple to fall to the ground.
Use the equation:

$$\text{time taken} = \frac{\text{change in velocity}}{\text{acceleration}}$$

_____

_____

_____

_____

Time taken = _____ s

(2)

(Total 7 marks)