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

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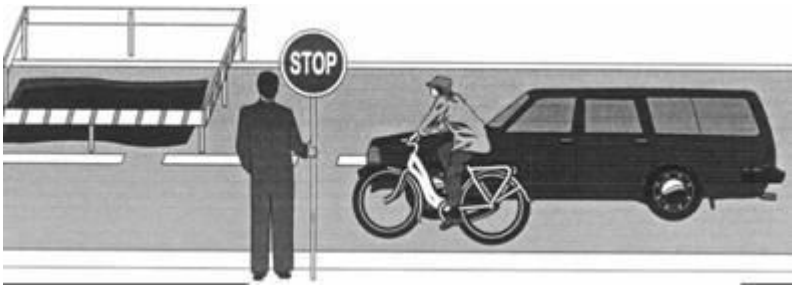
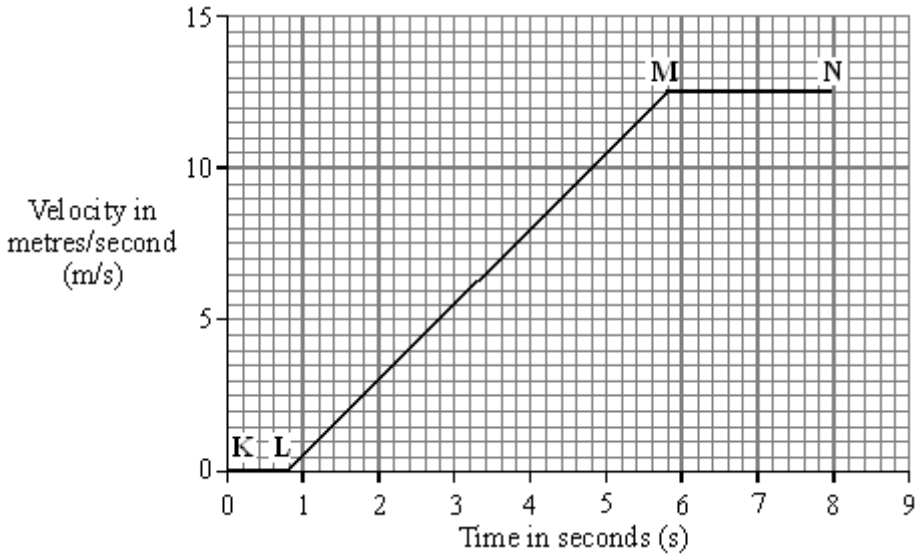
Name of the Student:_____
Max. Marks : 23 Marks **Time : 23 Minutes**

Q1.

A car and a bicycle are travelling along a straight road. They have stopped at road works.



The graph shows how the velocity of the car changes after the sign is changed to GO.



(a) Between which two points on the graph is the car moving at constant velocity?

_____

(1)

(b) Between which two points on the graph is the car accelerating?

_____

(1)

(c) Between the sign changing to GO and the car starting to move, there is a time delay. This is called the reaction time.

(i) What is the reaction time of the car driver?

Reaction time = _____ seconds

(1)

(ii) Which **one** of the following could increase the reaction time of a car driver? Tick the box next to your choice.

Drinking alcohol ☐

Wet roads ☐

Worn car brakes ☐

(1)

(d) The cyclist starts to move at the same time as the car. For the first 2 seconds the cyclist's acceleration is constant and is greater than that of the car.

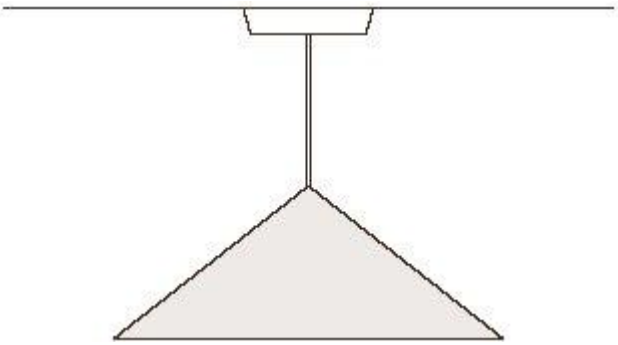
Draw a line on the graph to show how the velocity of the cyclist might change during the first 2 seconds of its motion.

(2)

(Total 6 marks)

Q2.

(a) The diagram shows a lampshade hanging from the ceiling. Draw an **X** on the diagram so that the centre of the **X** marks the centre of the mass of the lampshade.



(1)

(b) Complete the sentence using the correct word or phrase from the box.

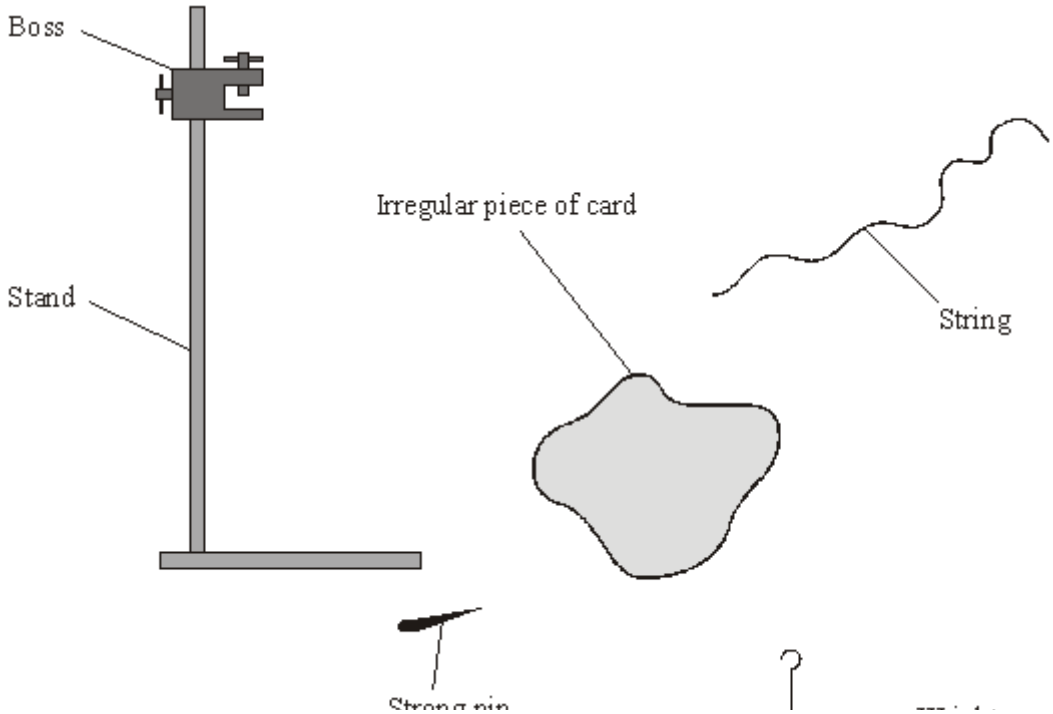
above	**below**	**to the left of**	**to the right of**

A suspended object will come to rest with its centre of mass directly

_____ the point of suspension.

(1)

(c) The diagrams show equipment that a student uses to find the centre of mass of a thin sheet of card.



Arrange these sentences in the correct order to describe how the student can find the centre of mass of the card.

The sequence starts with sentence **D** and finishes with sentence **E**.

A A line is drawn on the card marking the position of the string.

B The pin is put through one of the holes in the card and held in the boss.

C This is repeated using the other hole.

D Two holes are made in the card with each hole near to the edge of the card.

E The centre of mass is where the lines cross on the card.

F The weight is tied to the string and then the string is hung from the pin.

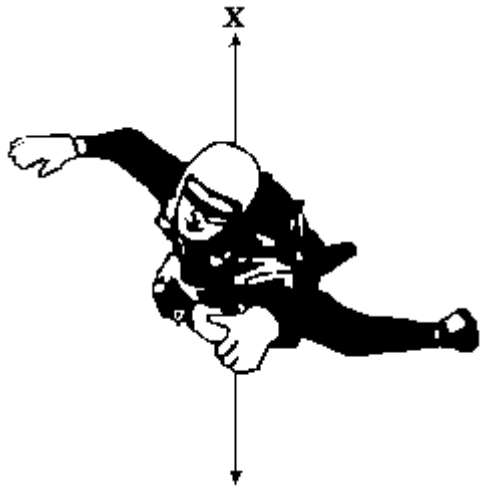
D					**E**

(3)

(Total 5 marks)

Q3.

The diagram shows a sky-diver in free fall. Two forces, **X** and **Y**, act on the sky-diver.



(a) Complete these sentences by crossing out the **two** lines in each box that are wrong.

(i) Force **X** is caused by

friction
gravity
weight

.

(1)

(ii) Force **Y** is caused by

air resistance
friction
gravity

.

(1)

(b) The size of force **X** changes as the sky-diver falls. Describe the motion of the sky-diver when:

(i) force **X** is smaller than force **Y**,

_____

_____

(2)

(ii) force **X** is equal to force **Y**.

_____

_____

(1)

(Total 5 marks)

Q4.

(a) Two skydivers jump from a plane. Each holds a different position in the air.

A **B**

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Complete the following sentence.

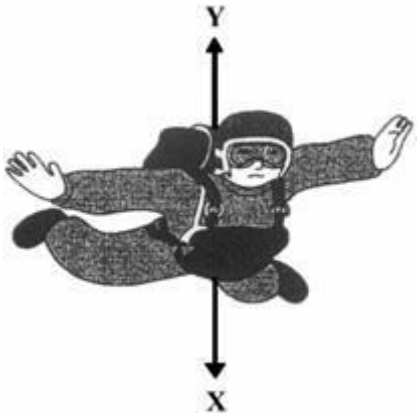
Skydiver _____ will fall faster because_____

_____

_____

(2)

The diagram shows the direction of the forces acting on one of the skydivers.



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(b) In the following sentences, cross out in each box the **two** lines that are wrong.

(i) Force **X** is caused by

air resistance
friction
gravity

(1)

(ii) Force **Y** is caused by

air resistance
gravity
weight

(1)

(iii) When force **X** is bigger than force **Y**, the speed of the skydiver will

go up
stay the same
go down

(1)

(iv) After the parachute opens, force **X**

goes up
stays the same
goes down

(1)

(c) How does the area of an opened parachute affect the size of force **Y**?

_____

_____

(1)

(Total 7 marks)