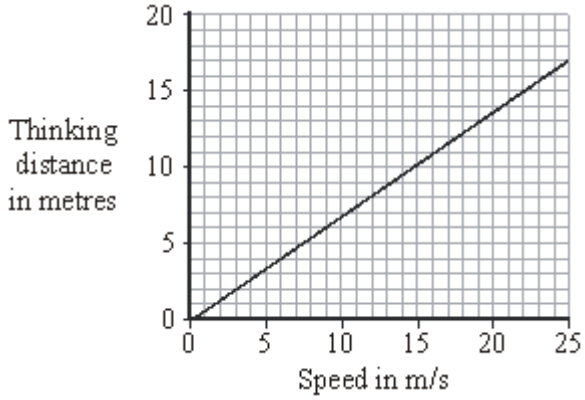
Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Forces (Standard Demand Questions)

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

Q1.

(a) A car driver takes a short time to react to an emergency before applying the brakes. The distance the car will travel during this time is called the 'thinking distance'.

The graph shows how the thinking distance of a driver depends on the speed of the car.



(i) What is the connection between thinking distance and speed?

_____

(1)

(ii) Many people drive while they are tired.

Draw a new line on the graph to show how thinking distance changes with speed for a tired driver.

(1)

(iii) The graph was drawn using data given in the Highway Code.

Do you think that the data given in the Highway Code is likely to be reliable?

Draw a ring around your answer.

Yes **No** **Maybe**

Give a reason for your answer.

_____

_____

(1)

(b) The distance a car travels once the brakes are applied is called the 'braking distance'.

(i) What is the relationship between thinking distance, braking distance and stopping distance?

_____

(1)

(ii) State **two** factors that could increase the braking distance of a car at a speed of 15 m/s.

1. _____

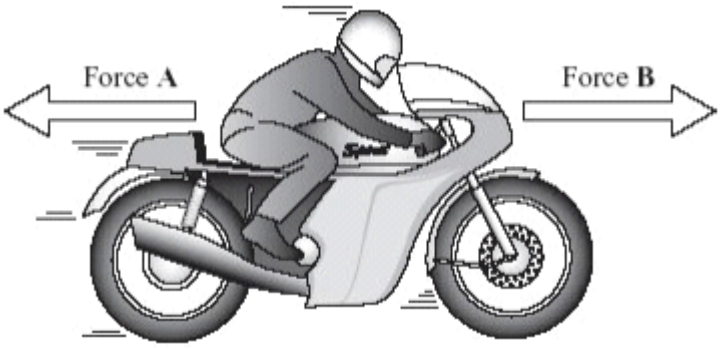
2. _____

(2)

(Total 6 marks)

Q2.

(a) The diagram shows the horizontal forces that act on a **moving** motorbike.



(i) Describe the movement of the motorbike when force **A** equals force **B**.

_____

_____

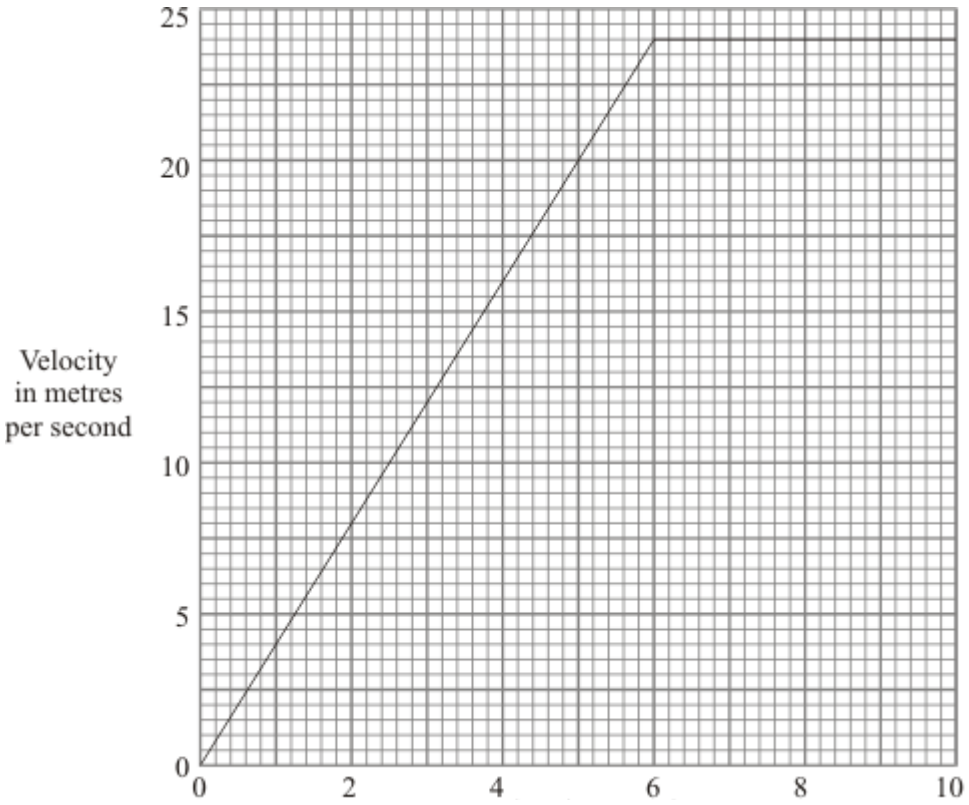
(2)

(ii) What happens to the speed of the motorbike if force **B** becomes smaller than force **A**?

_____

(1)

(b) The graph shows how the velocity of a motorbike changes when it is travelling along a straight road.



(i) What was the change in velocity of the motorbike in the first 5 seconds?

_____

(1)

(ii) Write down the equation which links acceleration, change in velocity and time taken.

_____

(1)

(iii) Calculate the acceleration of the motorbike during the first 5 seconds.
Show clearly how you work out your answer and give the unit.

_____

_____

Acceleration = _____

(3)

(c) A car is travelling on an icy road.

Describe and explain what might happen to the car when the brakes are applied.

_____

_____

_____

_____

(2)

(d) Name **three** factors, other than weather conditions, which would increase the overall stopping

distance of a vehicle.

1. _____

_____

2. _____

_____

3. _____

_____

(3)

(Total 13 marks)