Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 2_Motion and Forces

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

Q1.

* A car, travelling at 20 m/s, with just the driver inside takes 70 m to stop in an emergency. The same car is then fully loaded with luggage and passengers as well as the driver.

Explain why it will take a different distance to stop in an emergency from the same speed.

(6)

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Q2.

(a) Which of these situations can increase the reaction time of a driver?

Put a cross (☒) in the box next to your answer.

(1)

- ☐ **A** an icy road
- ☐ **B** worn tyres on his car
- ☐ **C** stopping for a cup of coffee
- ☐ **D** driving for a long time without taking a break

(b) (i) A car engine produces an average driving force of 1200 N.

The car travels 8.0 m.
Calculate the work done by the force over this distance.

(2)

work done = ... J

(ii) The car has a mass of 1400 kg and travels at a velocity of 25 m/s.
Calculate the kinetic energy of the car.

(3)

kinetic energy = ... J

Q3.

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 ☒ .

The graph in Figure 3 shows how the velocity of a car changes with time.

The car starts from rest and travels along a level, straight road for 50 s.

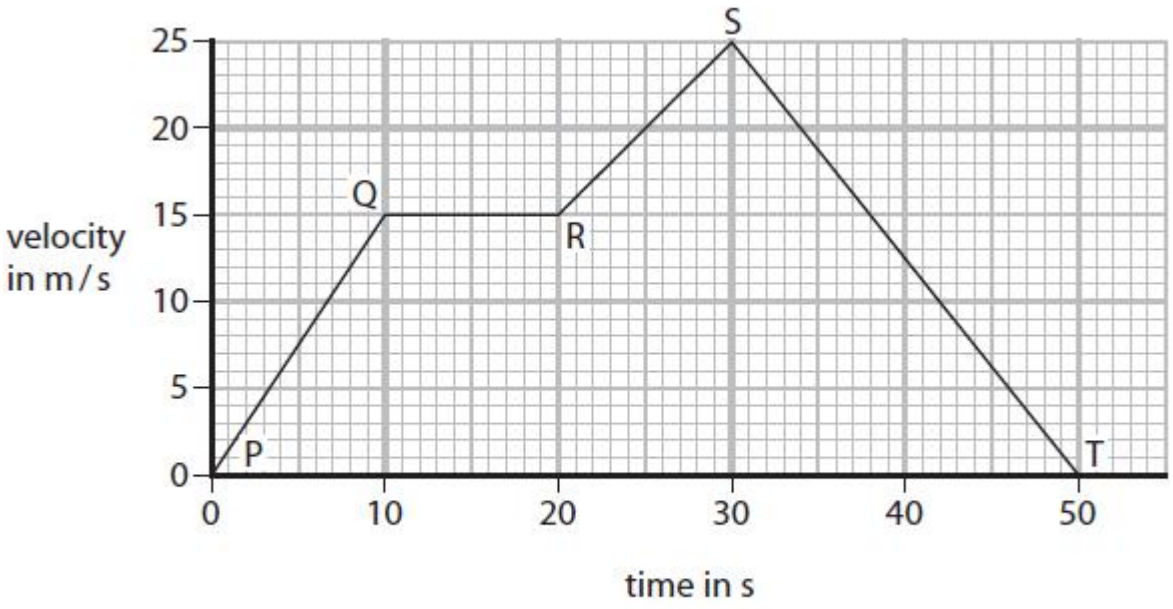

Figure 3

(i) Which part of the graph shows when the car has constant velocity?

(1)

- ☒ **A** PQ
- ☒ **B** QR
- ☒ **C** RS
- ☒ **D** ST

(ii) Which part of the graph shows when the car has the greatest acceleration?

(1)

- ☒ **A** PQ
- ☒ **B** QR
- ☒ **C** RS
- ☒ **D** ST

(iii) Calculate the acceleration of the car in the first 10 s shown on the graph.

(2)

Use the equation

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

acceleration = ... m / s^2

(iv) Calculate the distance the car travels in part QR shown on the velocity / time graph in Figure 3.

(3)

distance = ... m

(Total for question = 7 marks)