Full Name: …….. **Date: ……**

Short Assessment 1

Time Allowed: 20 minutes **Total Marks: 20**

1.

A car is travelling at a speed of 15 m/s. The driver applies the brakes and brings the car to a stop.

Fig. 2.2 represents the last part of the journey.

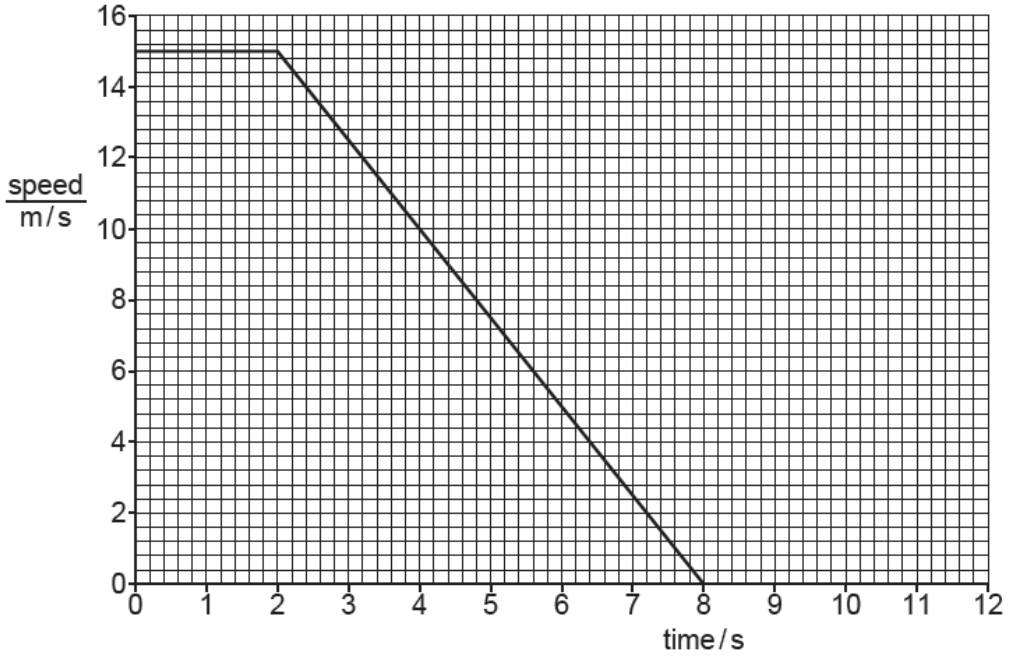

Fig. 2.2

` (a) Calculate the deceleration of the car.

Deceleration = ……
(2 marks)

(b) Calculate the distance travelled by the car during the 8 seconds shown in the graph.

Distance = ……..
(3 marks)

2. A car is moving with a constant deceleration of 3 m/s^2

   If its velocity now is 23 m/s, calculate its velocity after 4 seconds.

(3 marks)

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3. An object is thrown with speed of 8 m/s.

   The kinetic energy of the object just after throwing is 38.4 J.

   Calculate the mass of the object.

(3 marks)

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4. A box of mass 1.5 kg is moved from a lower shelf in a cupboard to a higher shelf.

   In the process the box gains 30 J of gravitation potential energy.

   What is the vertical height through which the box is moved in this process?

(3 marks)

5. A stone of mass 2kg is dropped from a height of 200 m above the ground.

(a) Calculate the gravitational potential energy lost by the object as it falls through the 200m height.

(2 marks)

(b) Calculate the speed with which the stone hits the ground.

(3 marks)

(c) State the assumption you made in answering part (b) above.

(1 marks)

- End of Test -