

Que 1. State whether speed is a scalar or a vector quantity. Give reason for your choice.

Que 2. What is the difference between "distance travelled" by a body and its 'displacement'? Explain with the help of a diagram.

Que 3. Derive the formula

$$s = ut + \frac{1}{2}at^2$$

Que 4. Write the three equations of uniformly accelerated motion. Give the meaning of each symbol which occurs in them.

Que 5. A motorcycle moving with a speed of  $5 \text{ m/s}$  is subjected to an acceleration of  $0.2 \text{ m/s}^2$ . Calculate the speed of the motorcycle after 10 seconds, and the distance travelled in this time.

Que 6. A car is travelling at  $20 \text{ m/s}$  along a road. A child runs out into the road  $50 \text{ m}$  ahead and the car driver steps on the break pedal. What must the car's deceleration be if the car is to stop just before it reaches the child?