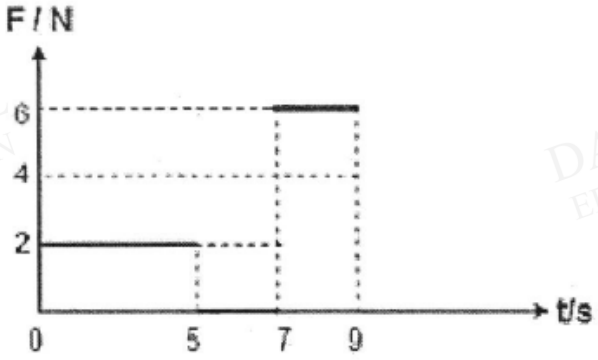
O Level Pure Physics MCQs

Kinematics Test 2.0

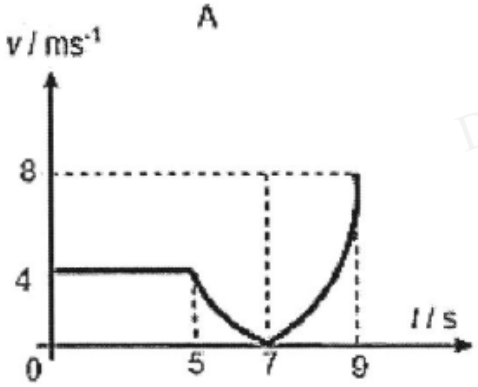
Q1

The graph below shows the applied force **F** acting on a 1 kg box which is moving at 4 ms^{-1} on a table for the first 5 seconds.

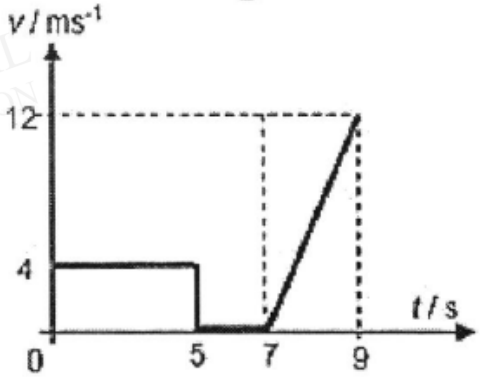


Which of the following velocity-time graph shows the motion of the box?

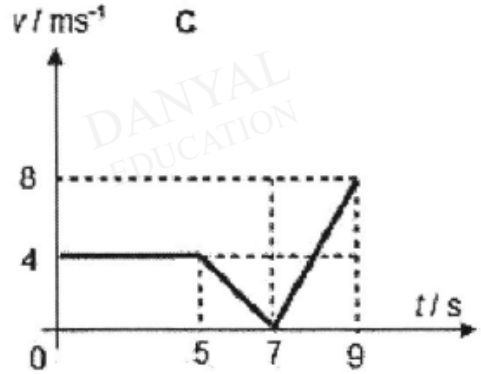
A



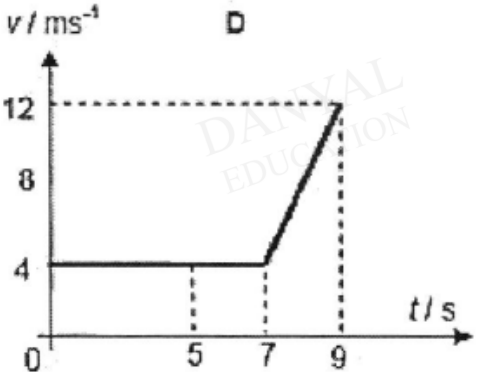
B



C

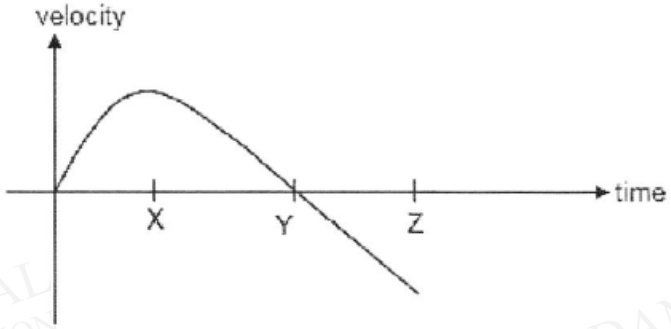


D



Q2

5. A water rocket is launched vertically upwards. The velocity-time graph below shows the relationship between the velocity of the rocket and time.



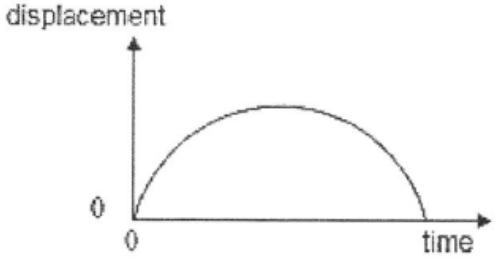
Which of the following statement(s) is/are correct?

(1) The rocket reaches the highest position at instant X.
(2) The resultant force acting on the rocket is zero at instant Y.
(3) The rocket is still in the air at instant Z.

A (1) only
B (3) only
C (1) and (2) only
D (2) and (3) only

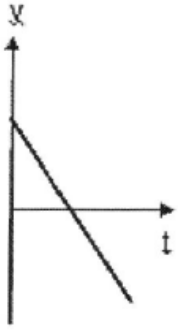
Q3

The diagram shows the graph of displacement against time for a body moving in a straight line.

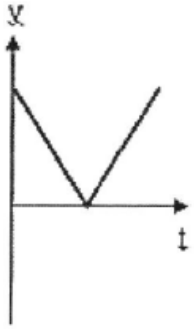


Which of the following velocity, v, against time, t, graphs describes the motion of the body over this period?

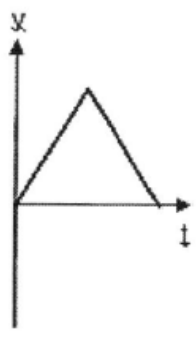
A



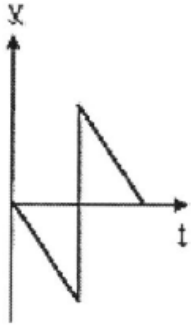
B



C

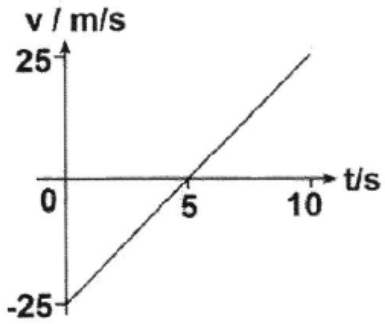


D



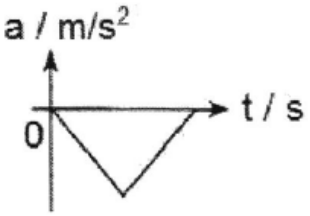
Q4

The graph below shows how the velocity of an object varies with time.

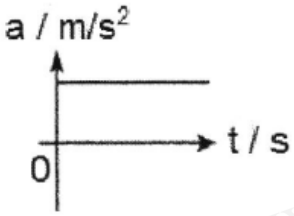


Which of the following graphs shows how the acceleration of the object varies with time?

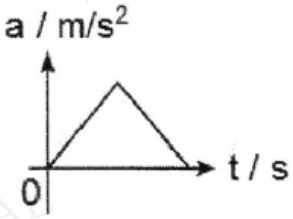
A



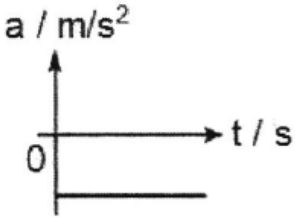
B



C



D



Q5

A racing car accelerates at 3 m s^{-2} from a speed of 2 m s^{-1}.

If the total distance travelled is 66 m, what is the final speed of the racing car?

A 20 m s^{-1} B 25 m s^{-1} C 97 m s^{-1} D 99 m s^{-1}

Q6

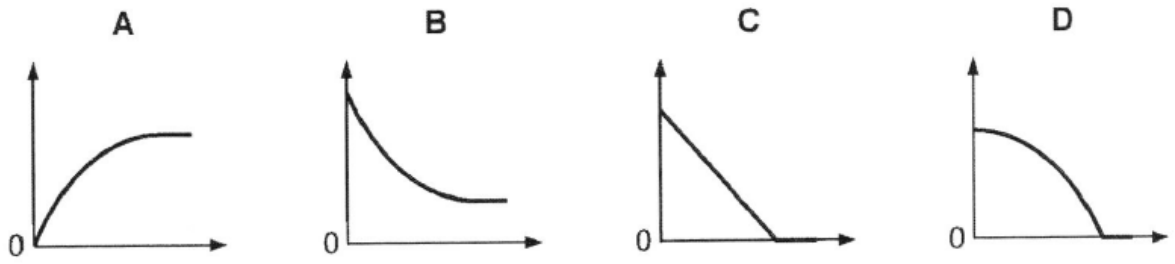
An object is falling under gravity with terminal velocity.

What is happening to its velocity?

A It is decreasing to a lower value.
B It is decreasing to zero.
C It is increasing.
D It is staying constant.

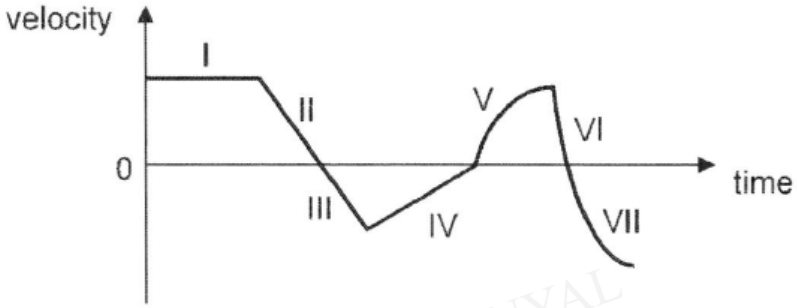
Q7

Which of the following distance-time graphs shows a car gradually slowing down until it stops?



Q8

The velocity-time graph of an object moving in a straight path is shown below. The graph is divided into seven sections from I to VII.



How many times does the car change direction?

A 3 **B** 4 **C** 5 **D** 6

Q9

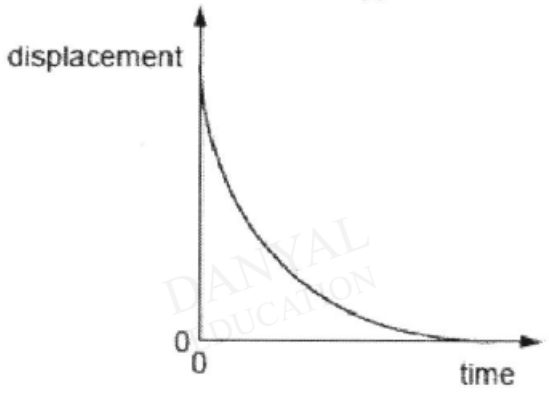
A car is moving round a horizontal roundabout at constant speed. Which of the following remains constant throughout the motion?

A acceleration of the car
B curved distance covered in a second
C velocity of the car
D resultant force on the car

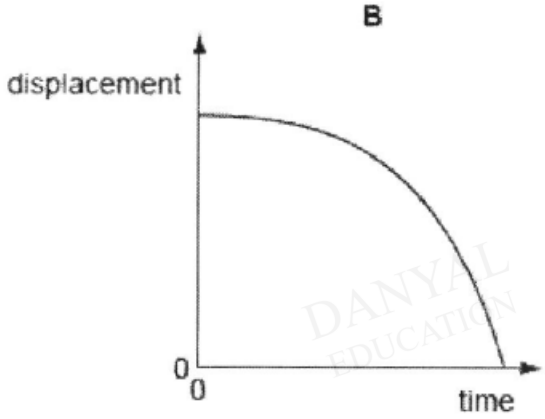
Q10

Which displacement-time graph best represents the motion of an falling object with constant acceleration of which eventually reduces until it begins to travel at constant terminal velocity?

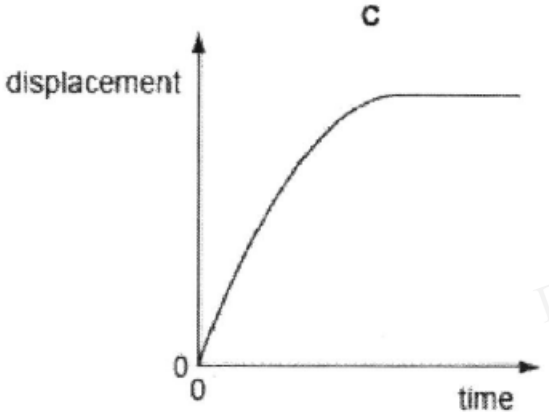
A



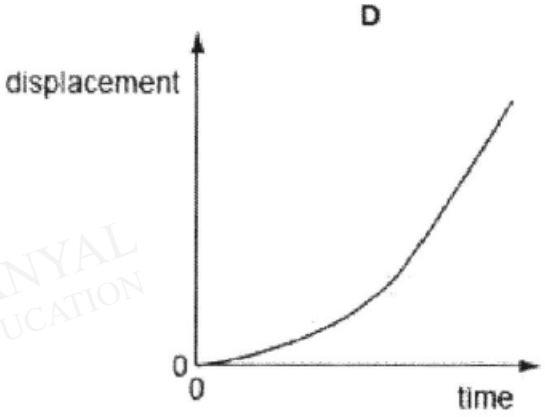
B



C



D



Answers

Kinematics Test 2.0

Q1 C

Q2 B

Q3 A

Q4 B

Q5 A

Q6 D

Q7 A

Q8 A

Q9 B

Q10 D