

Motion

Question Paper 1

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	Motion
Booklet	Question Paper 1

Time allowed: 19 minutes

Score: /15

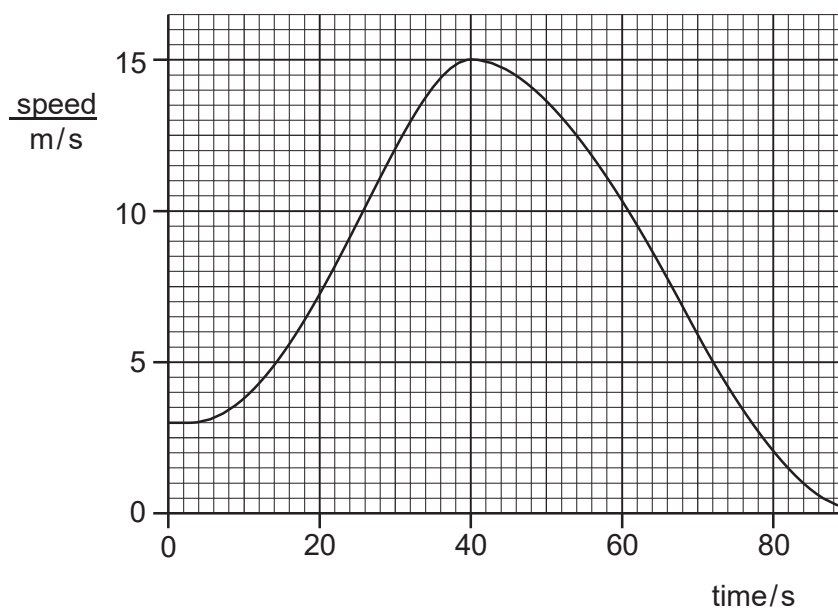
Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	55%	50%	43%	35%	<30%

Question 1

The speed-time graph shown is for a car moving in a straight line.



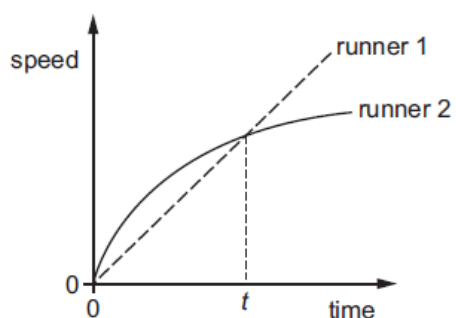
What is the acceleration of the car when the time is 40s?

- A 0 m/s^2 B $\frac{15-3}{40}\text{ m/s}^2$ C $\frac{15}{40}\text{ m/s}^2$ D $(15-3)\text{ m/s}^2$

Question 2

Two runners take part in a race.

The graph shows how the speed of each runner changes with time.



What does the graph show about the runners at time t ?

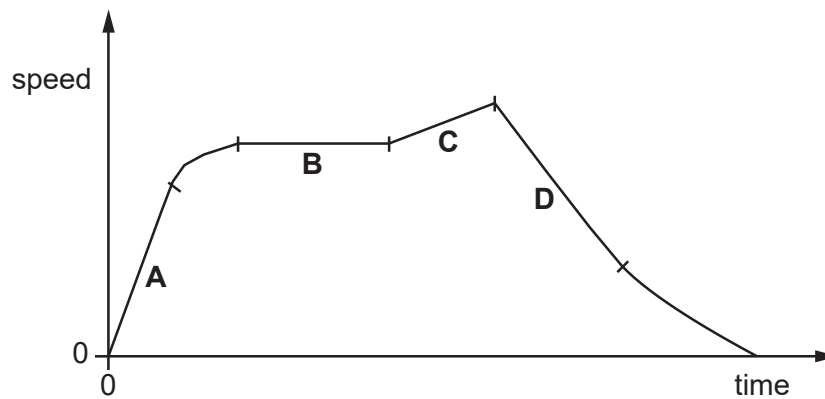
- A. Both runners are moving at the same speed.
- B. Runner 1 has zero acceleration.
- C. Runner 1 is overtaking runner 2.
- D. Runner 2 is slowing down.

Question 3

A car travels along a straight road.

The speed-time graph for this journey is shown.

During which labelled part of the journey is the resultant force on the car zero?



Question 4

A large stone is dropped from a bridge into a river. Air resistance can be ignored.

Which row describes the acceleration and the speed of the stone as it falls?

	acceleration of the stone	speed of the stone
A	constant	constant
B	constant	increasing
C	increasing	constant
D	increasing	increasing

Question 5

Below are four statements about acceleration.

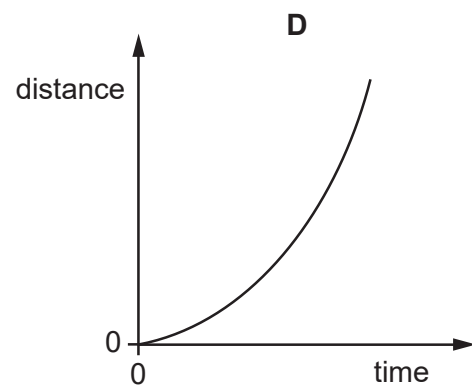
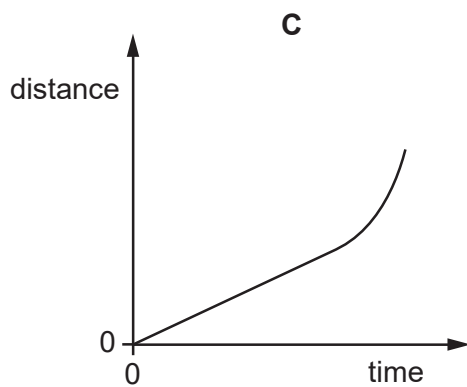
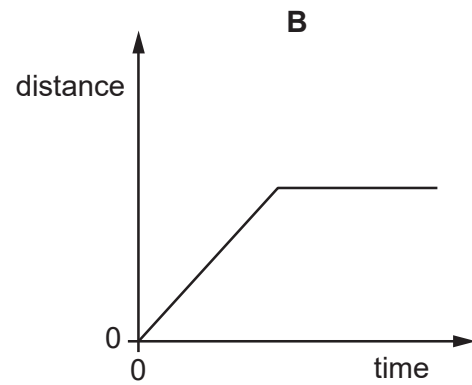
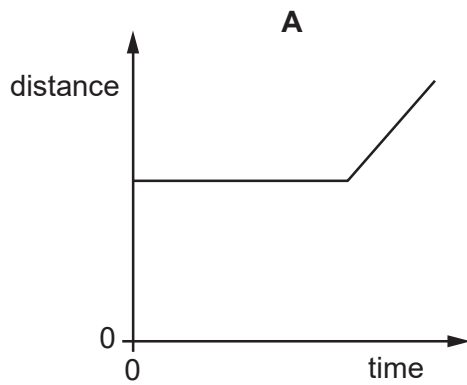
Which statement is not correct?

- A. Acceleration always involves changing speed.
- B. Changing direction always involves acceleration.
- C. Changing speed always involves acceleration.
- D. Circular motion always involves acceleration.

Question 6

An object moves at a constant speed for some time, then begins to accelerate.

Which distance-time graph shows this motion?



Question 7

A heavy object is released near the surface of the Earth and falls freely. Air resistance can be ignored.

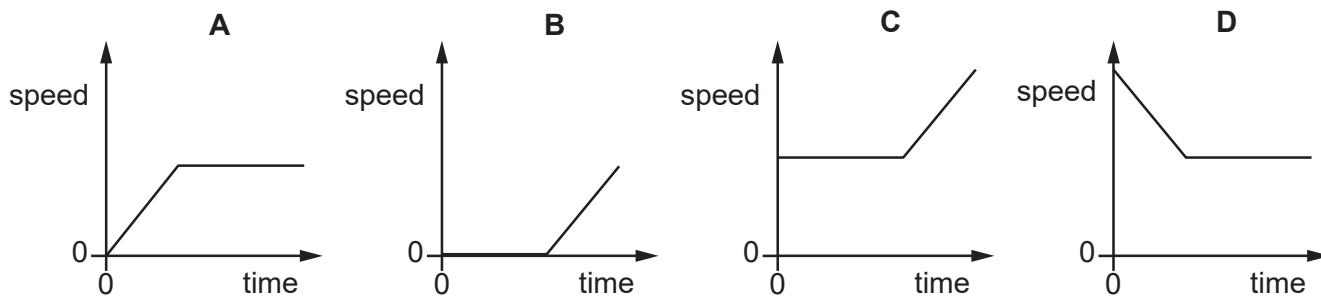
Which statement about the acceleration of the object due to gravity is correct?

- A The acceleration depends on the mass of the object.
- B The acceleration depends on the volume of the object.
- C The acceleration is constant.
- D The acceleration is initially zero and increases as the object falls.

Question 8

A car moves with constant speed and then constant acceleration.

Which graph is the speed-time graph for the car?



Question 9

A car travels 100 km. The journey takes two hours. The highest speed of the car is 80 km / h, and the lowest speed is 40 km/h.

What is the average speed for the journey?

- A 40 km/h B 50 km/h C 60 km/h D 120 km/h

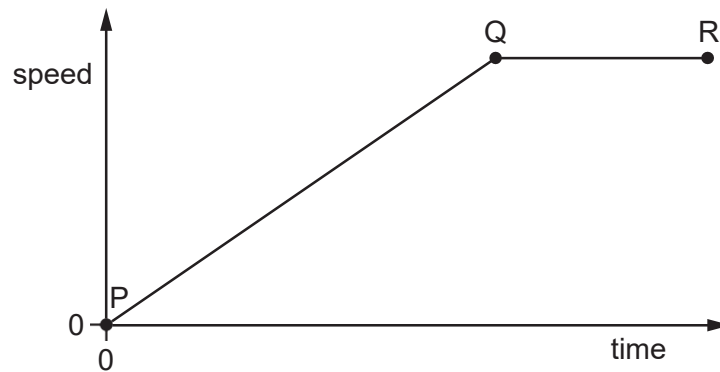
Question 10

What does the area under a speed-time graph represent?

- A. acceleration
- B. average speed
- C. deceleration
- D. distance travelled

Question 11

The speed-time graph shows the motion of a car.

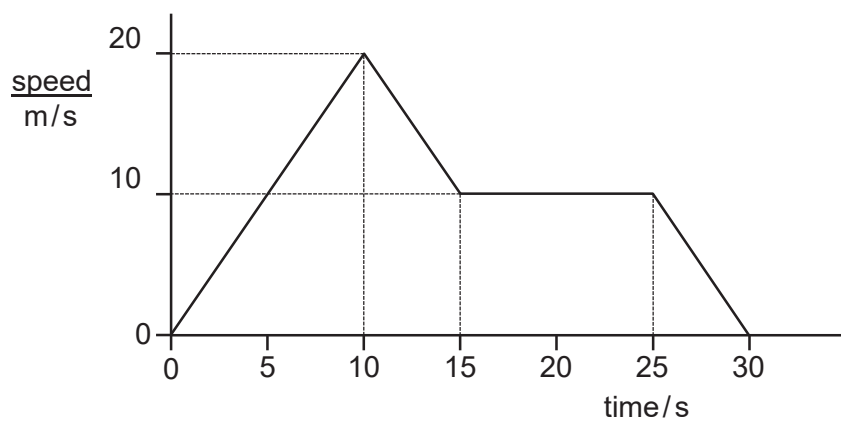


Which row describes the motion?

	between P and Q	between Q and R
A	accelerating	moving at constant speed
B	accelerating	not moving
C	moving at constant speed	decelerating
D	moving at constant speed	not moving

Question 12

The graph represents the motion of a car.

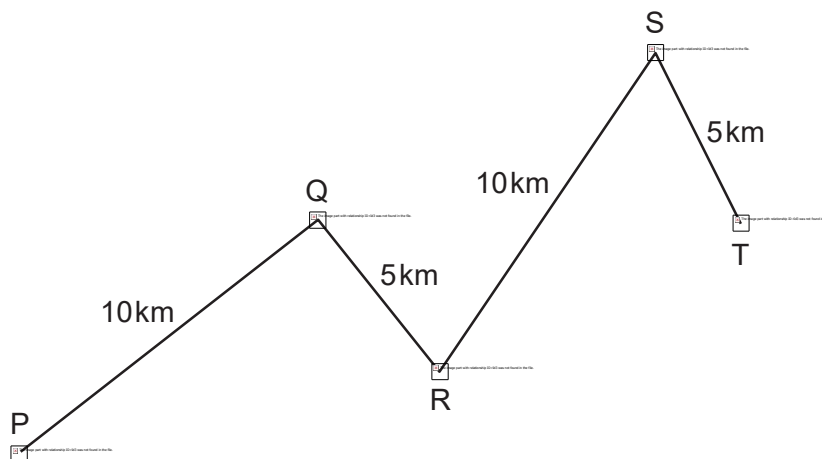


What is the distance travelled by the car while it is moving at a constant speed?

- A 100 m B 150 m C 250 m D 300 m

Question 13

A car travels along the route PQRST in 30 minutes.



What is the average speed of the car?

- A 10 km/hour B 20 km/hour C 30 km/hour D 60 km/hour

Question 14

The table shows the readings on a car speedometer at 5 second intervals.

time/s	speed km/h
0	0
5	30
10	50
15	60
20	65

Which row describes the speed and the acceleration of the car?

	speed	acceleration
A	decreasing	zero
B	decreasing	not zero
C	increasing	zero
D	increasing	not zero

Question 15

The diagram shows the distance-time graph for a car.

At which labelled point is the car moving with constant speed?

