ENGLAND GCSE COMBINED SCIENCE OCR TWENTY FIRST CENTURY FOUNDATION · UNIT 16 · 25 QUESTIONS

# Explaining Motion — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button so it can be fixed.

**1** **A passenger train brakes. What force slows it down?**

- A lift
- B friction
- C thrust
- D gravity, pulling it down

Understand It with Pulse | Flag a mistake

**2** **A tennis ball bounces. What happens to its kinetic energy?**

- A it disappears completely
- B some becomes heat
- C it all stays kinetic energy
- D it becomes light energy

Understand It with Pulse | Flag a mistake

3 **A red race car speeds up on a straight track. What is the resultant force doing?**

- A causing deceleration
- B causing a turn
- C doing nothing
- D causing acceleration

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4 **A Ferris wheel turns slowly. A person on the wheel moves in a circle. What is the person's speed like?**

- A increasing speed
- B zero speed
- C steady speed
- D decreasing speed

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5 **A bicycle is ridden uphill. Which energy store increases?**

- A thermal energy from friction
- B kinetic energy of motion
- C elastic potential energy
- D gravitational potential

Understand It with Pulse | Flag a mistake

6 **A basketball is dropped. What energy store increases as it falls?**

- A thermal
- B gravitational potential
- C kinetic
- D elastic

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7 **Why does a heavy lorry take longer to stop than a car at the same speed?**

A its tyres are wider

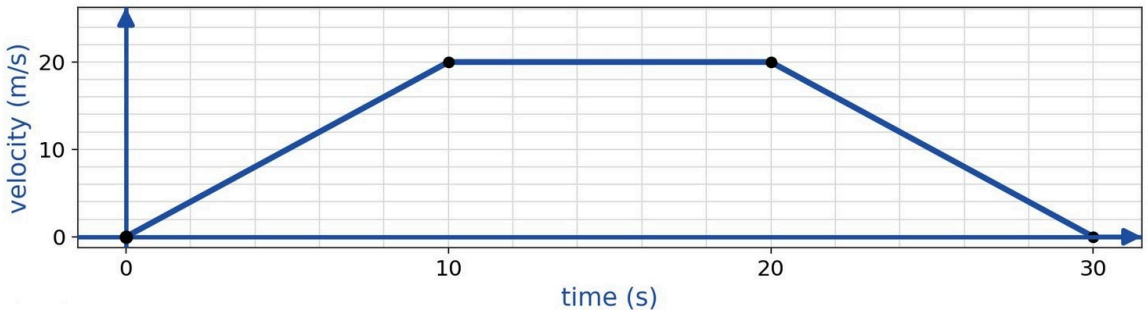
B its engine is bigger

C its brakes work harder

D it has more momentum

Understand It with Pulse | Flag a mistake

**8** **The graph shows a velocity-time graph. What is the acceleration in the first 10 seconds?**




A 10 m/s²

B 20 m/s²

C 2 m/s²

D 0 m/s²

Understand It with Pulse | Flag a mistake

9 **What is the unit of force?**

A the kilogram

B the watt

C the newton

D the joule

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10 **What is stopping distance?**

A thinking distance minus braking distance

B braking distance only

C thinking distance only

D thinking distance plus braking distance

Understand It with Pulse | Flag a mistake

**11** **Why does a faster car have a longer stopping distance?**

- A the driver reacts faster
- B it covers more distance overall
- C its brakes work less well at speed
- D the road gets longer

Understand It with Pulse | Flag a mistake

**12** **What force is needed to accelerate a 5 kg object at 4 m/s squared?**

- A 40 N
- B 25 N
- C 20 N
- D 10 N

Understand It with Pulse | Flag a mistake

13 **A force of 500 N acts on an area of 4 square metres. What is the pressure?**

- A 130 Pa
- B 62 Pa
- C 250 Pa
- D 125 Pa

Understand It with Pulse | Flag a mistake

14 **A force of 100 N acts on an area of 10 square metres. What is the pressure?**

- A 20 Pa
- B 1000 Pa
- C 10 Pa
- D 5 Pa

Understand It with Pulse | Flag a mistake

15 **Which of these is a scalar?**

A speed

B velocity

C force

D acceleration

Understand It with Pulse | Flag a mistake

16 **An object travels 300 m in 20 seconds. What is its speed?**

A 6000 m/s

B 7.5 m/s

C 15 m/s

D 30 m/s

Understand It with Pulse | Flag a mistake

17 **Why does a falling object reach a top speed?**

A drag grows to match weight

B gravity stops acting

C the object runs out of energy

D the air disappears

Understand It with Pulse | Flag a mistake

18 **An object speeds up from 5 m/s to 35 m/s in 5 seconds. What is its acceleration?**

A 12 $m/s^2$

B 6 $m/s^2$

C 30 $m/s^2$

D 3 $m/s^2$

Understand It with Pulse | Flag a mistake

19 **A force of 25 N acts 10 m from a pivot. What is the moment of the force?**

- A 500 Nm
- B 250 Nm
- C 125 Nm
- D 260 Nm

Understand It with Pulse | Flag a mistake

20 **What is the weight of a 50 kg object on Earth? Use g = 10 N/kg.**

- A 250 N
- B 1000 N
- C 500 N
- D 50 N

Understand It with Pulse | Flag a mistake

21 **A door is hard to push open near its hinges. Why?**

- A the moment is small
- B the handle is too far away
- C the hinges push back harder
- D the door is heavier near the hinges

Understand It with Pulse | Flag a mistake

22 **Why do crash helmets have a soft lining?**

- A it makes the helmet stronger
- B it makes the helmet lighter
- C it keeps the head warm
- D it lengthens the impact time

Understand It with Pulse | Flag a mistake

**23** **What is braking distance?**

- A the total stopping distance
- B the distance travelled while braking
- C the distance to the car ahead
- D the distance travelled while the driver reacts

Understand It with Pulse | Flag a mistake

**24** **What is the thinking distance?**

- A the distance travelled while braking
- B the total stopping distance
- C the distance between two cars
- D the distance covered while reacting

Understand It with Pulse | Flag a mistake

25 **What force is needed to accelerate a 5 kg object at 2 m/s squared?**

A 10 N

B 20 N

C 5 N

D 15 N

Understand It with Pulse | Flag a mistake

# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | B | **10.** | D | **19.** | B |
| **2.** | B | **11.** | B | **20.** | C |
| **3.** | D | **12.** | C | **21.** | A |
| **4.** | C | **13.** | D | **22.** | D |
| **5.** | D | **14.** | C | **23.** | B |
| **6.** | C | **15.** | A | **24.** | D |
| **7.** | D | **16.** | C | **25.** | A |
| **8.** | C | **17.** | A | | |
| **9.** | C | **18.** | B | | |

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