ENGLAND GCSE PHYSICS OCR TWENTY FIRST CENTURY FOUNDATION · UNIT 4 · 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 to let Brett know so he can fix it.

1 **A tennis ball is hit across a court. Which force slows the ball down in the air?**

- A gravity
- B the hit
- C friction with the ground
- D air resistance

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2 **A passenger train travels at a steady speed. What is its acceleration?**

- A 1 m/s²
- B 0 m/s²
- C 10 m/s²
- D 9.8 m/s²

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3 **A Ferris wheel is at the top. What is the person's height like?**

A unchanged

B at its greatest

C at zero

D at its smallest

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4 **A basketball bounces. What type of energy is stored when the ball squashes?**

A elastic potential

B kinetic

C thermal

D gravitational potential

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5 **A red race car travels at a steady speed. What is the resultant force on the car?**

- A 0 N
- B 100 N
- C 1000 N
- D 500 N

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6 **A bicycle has brakes. What do the brakes do to kinetic energy?**

- A turn it into light and sound
- B store it
- C destroy it
- D transfer it to heat

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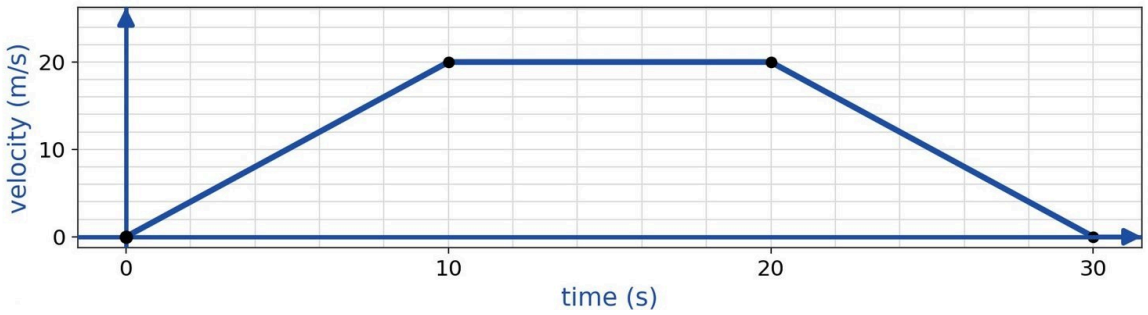
7 **The graph shows a velocity-time graph. What is the acceleration in the first 10 seconds?**



A 0 m/s²

B 2 m/s²

C 20 m/s²

D 10 m/s²

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8 **An object speeds up from 10 m/s to 20 m/s in 10 seconds. What is its acceleration?**

- A 0.5 m/s²
- B 10 m/s²
- C 2 m/s²
- D 1 m/s²

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9 **What force is needed to accelerate a 4 kg object at 3 m/s squared?**

- A 17 N
- B 12 N
- C 6 N
- D 24 N

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

A it lengthens the impact time

B it makes the helmet stronger

C it makes the helmet lighter

D it keeps the head warm

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11 **A force of 400 N acts on an area of 10 square metres. What is the pressure?**

A 20 Pa

B 40 Pa

C 80 Pa

D 45 Pa

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12 **A force of 20 N acts 10 m from a pivot. What is the moment of the force?**

- A 400 Nm
- B 100 Nm
- C 210 Nm
- D 200 Nm

Understand It with Pulse | Flag a mistake

13 **An object travels 300 m in 10 seconds. What is its speed?**

- A 60 m/s
- B 3000 m/s
- C 15 m/s
- D 30 m/s

Understand It with Pulse | Flag a mistake

14 **A skydiver falls and reaches terminal velocity. What is true about the forces on the skydiver?**

A weight is bigger than drag

B there are no forces at all

C drag is bigger than weight

D they are balanced

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15 **What is the stopping distance?**

A thinking distance plus braking distance

B braking distance only

C thinking distance minus braking distance

D thinking distance only

Understand It with Pulse | Flag a mistake

16 **A force of 100 N acts on an area of 2 square metres. What is the pressure?**

- A 200 Pa
- B 25 Pa
- C 50 Pa
- D 100 Pa

Understand It with Pulse | Flag a mistake

17 **A see-saw balances when the moments on each side are what?**

- A equal
- B zero on both sides
- C bigger on the heavy side
- D doubled on the left side

Understand It with Pulse | Flag a mistake

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

- **A** 100 N
- **B** 50 N
- **C** 10 N
- **D** 200 N

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19 **An object speeds up from 5 m/s to 25 m/s in 5 seconds. What is its acceleration?**

- **A** 4 m/s^2
- **B** 2 m/s^2
- **C** 20 m/s^2
- **D** 8 m/s^2

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

- A 16 N
- B 8 N
- C 32 N
- D 21 N

Understand It with Pulse | Flag a mistake

21 **What happens to momentum in a crash?**

- A it is conserved
- B it turns into heat only
- C it disappears completely
- D it doubles in size

Understand It with Pulse | Flag a mistake

22 **A force of 500 N acts on an area of 10 square metres. What is the pressure?**

- A 100 Pa
- B 55 Pa
- C 50 Pa
- D 25 Pa

Understand It with Pulse | Flag a mistake

23 **A force of 20 N acts 5 m from a pivot. What is the moment of the force?**

- A 200 Nm
- B 100 Nm
- C 110 Nm
- D 50 Nm

Understand It with Pulse | Flag a mistake

24 **An object travels 300 m in 25 seconds. What is its speed?**

- A 6 m/s
- B 7500 m/s
- C 12 m/s
- D 24 m/s

Understand It with Pulse | Flag a mistake

25 **A heavier skydiver and a lighter skydiver fall with the same parachute. Who falls faster at terminal velocity?**

- A neither falls at all
- B the heavier skydiver
- C the lighter skydiver
- D they fall at the same speed

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ANSWER KEY

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

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