ENGLAND GCSE COMBINED SCIENCE OCR TWENTY FIRST CENTURY HIGHER · 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 tennis ball bounces. What happens to its kinetic energy?**

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

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

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

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3 **A basketball is thrown up. What happens to its speed as it rises?**

- A it stays the same
- B it becomes zero
- C it decreases
- D it increases

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4 **A Ferris wheel turns. What force keeps a person moving in a circle?**

- A air resistance pushing them back
- B gravity only, pulling them down
- C centripetal force
- D friction only, gripping the seat

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

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

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6 **A red race car brakes hard. What happens to its kinetic energy?**

- A it increases
- B it disappears
- C it is transferred to heat
- D it becomes sound only, nothing else

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7 **Where is the pivot in a pair of scissors?**

- A at the tip of the blades
- B at the end of the handles
- C there is no pivot
- D where the two blades cross

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

- A 40 Pa
- B 20 Pa
- C 4000 Pa
- D 80 Pa

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9 **What force is needed to accelerate a 5 kg object at 3 m/s squared?**

- A 7.5 N
- B 15 N
- C 20 N
- D 30 N

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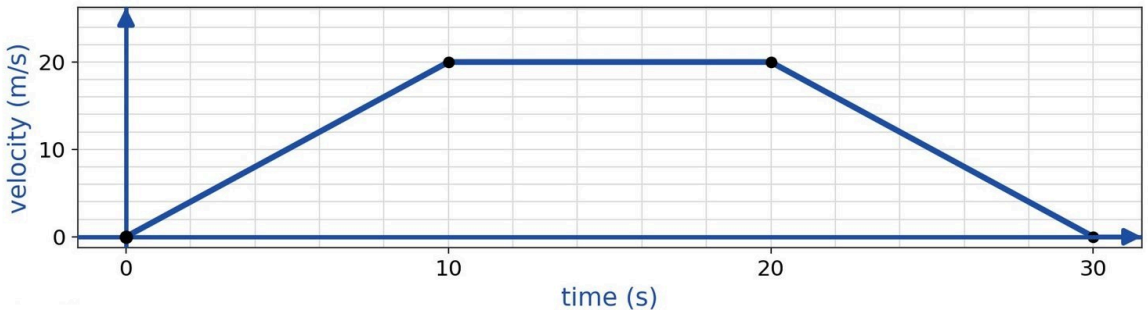
10 **The graph shows a velocity-time graph. What is the acceleration in the first 10 seconds?**



A 10 m/s²

B 0 m/s²

C 2 m/s²

D 20 m/s²

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

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

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12 **What is the weight of a 2 kg object on Earth? Use g = 10 N/kg.**

- A 40 N
- B 20 N
- C 2 N
- D 10 N

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13 **An object travels 200 m in 25 seconds. What is its speed?**

- A 16 m/s
- B 8 m/s
- C 5000 m/s
- D 4 m/s

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14 **An object speeds up from 10 m/s to 30 m/s in 5 seconds. What is its acceleration?**

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

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15 **What does a crumple zone do in a crash?**

A it stops the wheels turning

B it protects the paintwork

C it absorbs energy

D it makes the car faster

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16 **What is Newton's Second Law?**

A force equals mass times acceleration

B every action has an equal reaction

C an object stays still unless a force acts

D energy is conserved

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17 **What is the momentum of a 2 kg object moving at 6 m/s?**

- A 12 kg m/s
- B 8 kg m/s
- C 6 kg m/s
- D 24 kg m/s

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18 **A 10 kg trolley moves at 3 m/s. What is its momentum?**

- A 60 kg m/s
- B 35 kg m/s
- C 30 kg m/s
- D 15 kg m/s

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

- A drag is bigger than weight
- B they are balanced
- C there are no forces at all
- D weight is bigger than drag

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20 **A force of 50 N acts 2 m from a pivot. What is the moment of the force?**

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

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

A the moment is small

B the door is heavier near the hinges

C the hinges push back harder

D the handle is too far away

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22 **Which factor increases thinking distance?**

A being tired

B a wet road

C worn brakes

D worn tyres

Understand It with Pulse | Flag a mistake

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

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

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

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

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25

Why are speed limits lower near schools?

A to make cars quieter

B to stop cars sooner

C to save fuel

D to stop cars altogether

Understand It with Pulse

Flag a mistake

ANSWER KEY

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

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