ENGLAND GCSE PHYSICS OCR TWENTY FIRST CENTURY HIGHER · 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 passenger train travels at a steady speed. What is its acceleration?**

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

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

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

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

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

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4 **A tennis ball is served fast. What is its speed like?**

- A zero
- B low
- C negative
- D high

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

A thermal

B gravitational potential

C elastic potential

D kinetic

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

A friction only, gripping the seat

B gravity only, pulling them down

C air resistance pushing them back

D centripetal force

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7 **A small gear drives a large gear. What happens to the turning force?**

- **A** force up, speed down
- **B** it stays the same
- **C** it disappears
- **D** it falls and the speed rises

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8 **A 4 kg trolley moves at 2 m/s. What is its momentum?**

- **A** 13 kg m/s
- **B** 8 kg m/s
- **C** 16 kg m/s
- **D** 4 kg m/s

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

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

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10 **What is the momentum of a 5 kg object moving at 10 m/s?**

- **A** 100 kg m/s
- **B** 15 kg m/s
- **C** 50 kg m/s
- **D** 25 kg m/s

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

A it stops the wheels turning

B it protects the paintwork

C it makes the car faster

D it absorbs energy

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

A acceleration

B speed

C velocity

D force

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

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

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14 **An object speeds up from 10 m/s to 40 m/s in 10 seconds. What is its acceleration?**

- **A** 3 m/s^2
- **B** 30 m/s^2
- **C** 6 m/s^2
- **D** 1.5 m/s^2

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15 **A force of 100 N acts on an area of 5 square metres. What is the pressure?**

- A 40 Pa
- B 500 Pa
- C 20 Pa
- D 10 Pa

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

- A 6000 m/s
- B 7.5 m/s
- C 30 m/s
- D 15 m/s

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17 **A force of 200 N acts on an area of 5 square metres. What is the pressure?**

- A 20 Pa
- B 40 Pa
- C 45 Pa
- D 80 Pa

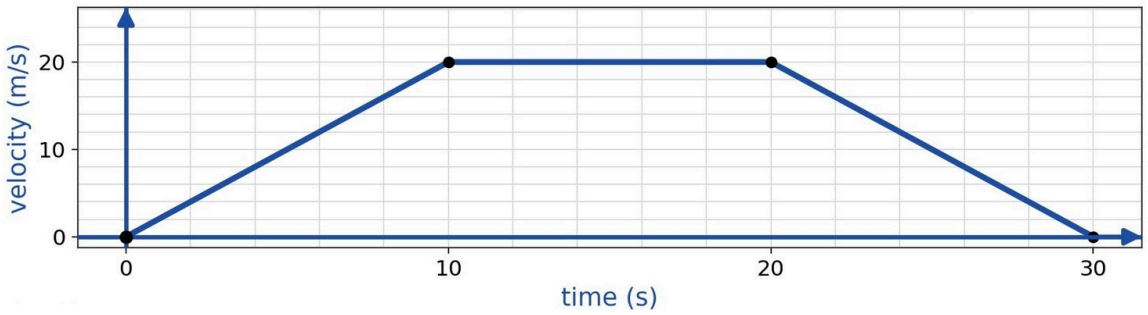
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18 **A force of 50 N acts 10 m from a pivot. What is the moment of the force?**

- A 1000 Nm
- B 510 Nm
- C 500 Nm
- D 250 Nm

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



A 2 m/s²

B 20 m/s²

C 0 m/s²

D 10 m/s²

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

A there are no forces at all

B they are balanced

C weight is bigger than drag

D drag is bigger than weight

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21 **What force is needed to accelerate a 10 kg object at 2 m/s squared?**

A 25 N

B 20 N

C 10 N

D 40 N

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

A the watt

B the newton

C the kilogram

D the joule

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23 **A 2 kg trolley moves at 10 m/s. What is its momentum?**

A 25 kg m/s

B 10 kg m/s

C 20 kg m/s

D 40 kg m/s

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24 **What is the momentum of a 5 kg object moving at 6 m/s?**

- A 30 kg m/s
- B 15 kg m/s
- C 60 kg m/s
- D 11 kg m/s

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

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

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ANSWER KEY

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

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