ENGLAND GCSE PHYSICS OCR TWENTY FIRST CENTURY HIGHER · UNIT 6 · 25 QUESTIONS

Matter - Models and Explanations — 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 swimming pool holds water with a density of 1000 kg per cubic metre. What is the mass of 2 cubic metres of the water?**

A 500 kg

B 4000 kg

C 1000 kg

D 2000 kg

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2 **An ice cream cone is put in a freezer. What happens to the liquid?**

A it boils

B it condenses

C it evaporates

D it freezes

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3 **A ladder leans against a wall. What force keeps it from slipping?**

A friction

B air resistance

C tension

D gravity

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4 **A hot air balloon cools down. What happens?**

A it rises faster

B it sinks

C it bursts

D it stays still

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5 **A thermometer is placed in hot water. What happens to the liquid inside the thermometer?**

A it freezes

B it expands

C it evaporates

D it contracts

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6 **A cup of coffee cools down. Energy is transferred to the surroundings. What type of change is this?**

A a neutralisation

B a chemical change

C a reversible reaction

D an energy transfer

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7 **Why does a change of state need energy even though the temperature stays the same?**

A the temperature is wrong

B the particles need to slow down

C energy is needed to break bonds

D energy is destroyed in the change

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8 **How much energy is needed to heat 5 kg of a substance with a specific heat capacity of 2100 J per kg per degree Celsius by 20 degrees Celsius?**

- A 105000 J
- B 420000 J
- C 210000 J
- D 10500 J

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9 **A gas in a sealed container is heated. What happens to the pressure?**

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

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10 **How much energy is needed to change 3 kg of a substance from liquid to gas, if the specific latent heat is 2260000 J per kg?**

A 6780000 J

B 13560000 J

C 3390000 J

D 2260003 J

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11 **A 5 kg block has a specific heat capacity of 500 J/kg degrees Celsius. Its temperature rises by 5 degrees Celsius. How much energy is needed?**

A 13000 J

B 6250 J

C 12500 J

D 25000 J

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12 **Light from a distant galaxy is shifted towards the red end of the spectrum. What is this effect called?**

- A reflection
- B blue-shift
- C refraction
- D red-shift

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13 **An object has a mass of 200 g and a volume of 25 cubic centimetres. What is its density?**

- A 8 g/cm³
- B 225 g/cm³
- C 16 g/cm³
- D 4 g/cm³

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14 **A 2 kg mass of ice melts. The specific latent heat of fusion of ice is 400 J/kg. How much energy is needed?**

- A 400 J
- B 1600 J
- C 800 J
- D 900 J

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15 **What are polar orbit satellites used for?**

- A talking to the Moon
- B staying over one place, like a TV satellite
- C it watches the whole Earth
- D blocking sunlight

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16 **What fuel does a main sequence star fuse?**

A oxygen

B carbon

C helium, which is the product

D hydrogen

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17 **What is red-shift?**

A light from a star getting brighter

B light shifted to the red end

C light from the Sun getting hotter

D light bending around a planet

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18 **About how far away is the nearest star after the Sun?**

A about 4 kilometres

B about 4 million kilometres

C about 4 light-years

D about 400 light-years

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19 **A material has a density of 2 g per cubic centimetre. What is the mass of 25 cubic centimetres of it?**

A 27 g

B 50 g

C 100 g

D 25 g

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20 **Two identical springs are stretched by the same force. How do their extensions compare?**

A both stretch to zero

B they are the same

C one stretches twice as far

D one does not stretch at all

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21 **In the specific heat capacity practical, what is measured with a joulemeter?**

A the temperature of the room

B the mass of the block

C the time taken to melt

D the energy supplied

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22 **What happens to internal energy when a substance is heated?**

A it increases

B it stays the same

C it becomes zero

D it decreases

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23 **A spring has a spring constant of 20 N/m. It is stretched by 4 cm. What is the force?**

A 0.4 N

B 1.6 N

C 0.8 N

D 1.3 N

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24 **What happens to the orbital speed of a planet further from the Sun?**

- A it stops
- B it is faster
- C it is slower
- D it stays the same

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25 **A block has a mass of 400 g and a volume of 250 cubic centimetres. What is its density?**

- A 0.8 g/cm³
- B 1.6 g/cm³
- C 3.2 g/cm³
- D 4.6 g/cm³

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ANSWER KEY

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

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