ENGLAND GCSE COMBINED SCIENCE EDEXCEL FOUNDATION · UNIT 28 · 25 QUESTIONS

Particle Model — 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 hot air balloon is filled with hot air. Why does it rise?**

- A hot air is heavier than cold air
- B hot air is less dense
- C hot air has no mass
- D hot air is colder

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2 **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 4000 kg
- B 500 kg
- C 2000 kg
- D 1000 kg

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3 **A cup of coffee is hot. How is energy transferred to the air?**

A by evaporation only, from the top

B by conduction and convection

C by condensation on the cold cup

D by radiation only, from the surface

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

A it condenses

B it freezes

C it evaporates

D it boils

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5 **Glass marbles are shaken in a tray. What does this model?**

- A particles disappearing completely
- B particles freezing into place
- C particles bonding together
- D particles gaining energy

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6 **A thermometer shows a patient's temperature is 39 degrees Celsius. Is this above or below normal body temperature?**

- A impossible to tell
- B above normal
- C exactly normal
- D below normal

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7 **A material has a density of 8 g per cubic centimetre. What is the mass of 25 cubic centimetres of it?**

- A 33 g
- B 100 g
- C 200 g
- D 400 g

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8 **A 5 kg mass of ice melts. The specific latent heat of fusion of ice is 400 J/kg. How much energy is needed?**

- A 2100 J
- B 1000 J
- C 4000 J
- D 2000 J

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9 **A substance is heated but its temperature does not change. What is the energy doing?**

- A escaping as light
- B making the particles stop
- C breaking bonds
- D heating the container only

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10 **Why does heating a gas in a sealed container raise the pressure?**

- A the particles stop moving
- B the container gets smaller
- C they hit the walls harder
- D the particles get bigger

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11 **In the specific heat capacity practical, why is the heater left on for the same time for each block?**

- A so the thermometer reads zero
- B so the heater does not cool down
- C the energy supplied is the same
- D so each block melts

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12 **How much energy is needed to heat 5 kg of a substance with a specific heat capacity of 4200 J per kg per degree Celsius by 20 degrees Celsius?**

- A 21000 J
- B 420000 J
- C 210000 J
- D 840000 J

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13 **A block has a mass of 1000 g and a volume of 250 cubic centimetres. What is its density?**

- A 7 g/cm³
- B 2 g/cm³
- C 4 g/cm³
- D 8 g/cm³

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14 **How much energy is needed to change 5 kg of a substance from liquid to gas, if the specific latent heat is 2260000 J per kg?**

- A 22600000 J
- B 11300000 J
- C 2260005 J
- D 5650000 J

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15 **An object has a mass of 20 g and a volume of 10 cubic centimetres. What is its density?**

- **A** 4 g/cm³
- **B** 1 g/cm³
- **C** 2 g/cm³
- **D** 30 g/cm³

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16 **A material has a density of 4 g per cubic centimetre. What is the mass of 25 cubic centimetres of it?**

- **A** 50 g
- **B** 29 g
- **C** 100 g
- **D** 200 g

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17 **A 4 kg mass of ice melts. The specific latent heat of fusion of ice is 400 J/kg. How much energy is needed?**

- A 1700 J
- B 1600 J
- C 3200 J
- D 800 J

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18 **What happens to the particles when a solid melts?**

- A they disappear
- B they move more freely
- C they stop moving altogether
- D they get smaller

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

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

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

- A the mass of the block
- B the temperature of the room
- C the time taken to melt
- D the energy supplied

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21 **How much energy is needed to heat 2 kg of a substance with a specific heat capacity of 4200 J per kg per degree Celsius by 10 degrees Celsius?**

A 8400 J

B 168000 J

C 84000 J

D 42000 J

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22 **A block has a mass of 400 g and a volume of 500 cubic centimetres. What is its density?**

A 3.8 g/cm³

B 0.4 g/cm³

C 1.6 g/cm³

D 0.8 g/cm³

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23 How much energy is needed to change 3 kg of a substance from solid to liquid, if the specific latent heat is 334000 J per kg?

- A 1002000 J
- B 334003 J
- C 2004000 J
- D 501000 J

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24 A material has a density of 2 g per cubic centimetre. What is the mass of 20 cubic centimetres of it?

- A 22 g
- B 80 g
- C 20 g
- D 40 g

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25

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

A the particles need to slow down

B the temperature is wrong

C energy is destroyed in the change

D energy is needed to break bonds

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ANSWER KEY

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

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