ENGLAND GCSE PHYSICS AQA FOUNDATION · UNIT 3 · 25 QUESTIONS

Particle Model of Matter — 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 cup of coffee is hot. How is energy transferred to the air?**

- A by conduction and convection
- B by evaporation only, from the top
- C by condensation on the cold cup
- D by radiation only, from the surface

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

- A it expands
- B it evaporates
- C it contracts
- D it freezes

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3 **Glass marbles are used to model atoms. What is a limitation of the model?**

- A marbles are much bigger than atoms
- B marbles are too small to see properly
- C marbles are the wrong colour for atoms
- D marbles cannot be counted accurately at all

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4 **A swimming pool is filled with water. What is the density of water?**

- A about 100 kilograms per cubic metre, roughly
- B about 1 kilogram per cubic metre
- C about 10 kilograms per cubic metre
- D about 1000 kilograms per cubic metre

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

A it boils

B it evaporates

C it condenses

D it freezes

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

A it sinks

B it rises faster

C it bursts

D it stays still

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7 **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 2260003 J

B 13560000 J

C 3390000 J

D 6780000 J

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8 **In which state do particles vibrate in fixed positions?**

A solid

B gas

C plasma

D liquid

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

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

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10 **How much energy is needed to heat 1 kg of a substance with a specific heat capacity of 4200 J per kg per degree Celsius by 10 degrees Celsius?**

- A 4200 J
- B 84000 J
- C 42000 J
- D 21000 J

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11 **An object has a mass of 200 g and a volume of 20 cubic centimetres. What is its density?**

- **A** 20 g/cm³
- **B** 5 g/cm³
- **C** 220 g/cm³
- **D** 10 g/cm³

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12 **A material has a density of 8 g per cubic centimetre. What is the mass of 20 cubic centimetres of it?**

- **A** 28 g
- **B** 320 g
- **C** 160 g
- **D** 80 g

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13 **A block has a mass of 400 g and a volume of 100 cubic centimetres. What is its density?**

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

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

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

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15 **In the density practical, how is the volume of an irregular object found?**

A by measuring its length only

B by heating it and timing it

C by weighing it twice

D by the rise in water level

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16 **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 900 J

B 1600 J

C 800 J

D 400 J

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17 **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 501000 J
- B 2004000 J
- C 334003 J
- D 1002000 J

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18 **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 5 degrees Celsius?**

- A 84000 J
- B 21000 J
- C 42000 J
- D 8400 J

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19 **An object has a mass of 50 g and a volume of 20 cubic centimetres. What is its density?**

- A 5 g/cm³
- B 70 g/cm³
- C 1.25 g/cm³
- D 2.5 g/cm³

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20 **A material has a density of 5 g per cubic centimetre. What is the mass of 25 cubic centimetres of it?**

- A 62.5 g
- B 30 g
- C 250 g
- D 125 g

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21 **A block has a mass of 1000 g and a volume of 200 cubic centimetres. What is its density?**

- A 8 g/cm³
- B 5 g/cm³
- C 10 g/cm³
- D 2.5 g/cm³

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

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

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

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

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24 **A 2 kg mass of ice melts. The specific latent heat of fusion of ice is 200 J/kg. How much energy is needed?**

- A 800 J
- B 500 J
- C 200 J
- D 400 J

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25 **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 2260005 J

B 5650000 J

C 11300000 J

D 22600000 J

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ANSWER KEY

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

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