ENGLAND GCSE COMBINED SCIENCE OCR GATEWAY HIGHER · UNIT 13 · 25 QUESTIONS

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 so it can be fixed.

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

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2 **An ice cream cone melts. What is the melting point of the ice cream?**

- A around 100 degrees Celsius
- B around minus 20 degrees Celsius
- C around 0 degrees Celsius
- D around 37 degrees Celsius

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3 **Glass marbles in a tray are used as a model for particles in a solid. What do the marbles show?**

- A particles vibrate in fixed positions
- B particles move freely through space
- C particles are far apart from each other
- D particles flow past each other easily

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4 **A hot air balloon is filled with hot air. Why does it rise?**

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

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

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

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

- A an energy transfer
- B a reversible reaction
- C a neutralisation
- D a chemical change

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

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

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8 **A material has a density of 2 g per cubic centimetre. What is the mass of 10 cubic centimetres of it?**

- **A** 10 g
- **B** 40 g
- **C** 12 g
- **D** 20 g

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9 **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 400 J
- B 200 J
- C 500 J
- D 800 J

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10 **A 5 kg block has a specific heat capacity of 500 J/kg degrees Celsius. Its temperature rises by 10 degrees Celsius. How much energy is needed?**

- A 50000 J
- B 25000 J
- C 12500 J
- D 25500 J

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11 **How much energy is needed to heat 1 kg of a substance with a specific heat capacity of 900 J per kg per degree Celsius by 10 degrees Celsius?**

- A 900 J
- B 9000 J
- C 4500 J
- D 18000 J

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12 **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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13 **An object has a mass of 20 g and a volume of 10 cubic centimetres. What is its density?**

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

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

- A solid
- B liquid
- C gas
- D plasma

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15 **How much energy is needed to change 1 kg of a substance from solid to liquid, if the specific latent heat is 334000 J per kg?**

- A 334001 J
- B 334000 J
- C 167000 J
- D 668000 J

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

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

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

- A 1 g/cm³
- B 4 g/cm³
- C 0.5 g/cm³
- D 2 g/cm³

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18 **A 2 kg mass of ice melts. The specific latent heat of fusion of ice is 100 J/kg. How much energy is needed?**

- A 200 J
- B 300 J
- C 400 J
- D 100 J

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19 **A 4 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 20000 J
- B 10000 J
- C 10500 J
- D 5000 J

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20 **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 21000 J
- B 42000 J
- C 4200 J
- D 84000 J

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21 **What is internal energy?**

- A the heat lost to the room
- B the total energy of the particles
- C the energy of the container and the room
- D the energy of one particle only

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22 **An object has a mass of 100 g and a volume of 50 cubic centimetres. What is its density?**

- A 4 g/cm³
- B 150 g/cm³
- C 2 g/cm³
- D 1 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 334003 J

B 1002000 J

C 501000 J

D 2004000 J

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24 **A material has a density of 8 g per cubic centimetre. What is the mass of 10 cubic centimetres of it?**

A 160 g

B 18 g

C 80 g

D 40 g

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25 **A 5 kg mass of ice melts. The specific latent heat of fusion of ice is 100 J/kg. How much energy is needed?**

A 1000 J

B 250 J

C 500 J

D 600 J

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ANSWER KEY

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

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