ENGLAND GCSE COMBINED SCIENCE OCR GATEWAY FOUNDATION · 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 hot air balloon rises because the air inside it is less dense than the air outside. What happens to the density of air when it is heated?**

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

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

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

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

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

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4 **A cup of coffee is left for an hour. What happens to its temperature?**

- A it stays the same all day
- B it falls to room temperature
- C it rises above room temperature
- D it falls to zero degrees

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

A marbles are much bigger than atoms

B marbles cannot be counted accurately at all

C marbles are too small to see properly

D marbles are the wrong colour for atoms

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

A around minus 20 degrees Celsius

B around 0 degrees Celsius

C around 37 degrees Celsius

D around 100 degrees Celsius

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7 **How much energy is needed to heat 4 kg of a substance with a specific heat capacity of 4200 J per kg per degree Celsius by 20 degrees Celsius?**

- A 168000 J
- B 336000 J
- C 672000 J
- D 16800 J

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8 **An object has a mass of 40 g and a volume of 25 cubic centimetres. What is its density?**

- A 1.6 g/cm³
- B 0.8 g/cm³
- C 3.2 g/cm³
- D 65 g/cm³

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

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

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10 **A 10 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 1100 J
- C 2000 J
- D 500 J

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11 **A block has a mass of 200 g and a volume of 100 cubic centimetres. What is its density?**

- A 4 g/cm³
- B 2 g/cm³
- C 1 g/cm³
- D 5 g/cm³

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12 **A 2 kg block has a specific heat capacity of 100 J/kg degrees Celsius. Its temperature rises by 20 degrees Celsius. How much energy is needed?**

- A 4500 J
- B 2000 J
- C 8000 J
- D 4000 J

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13 **How much energy is needed to change 2 kg of a substance from liquid to gas, if the specific latent heat is 2260000 J per kg?**

- A 9040000 J
- B 4520000 J
- C 2260000 J
- D 2260002 J

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

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

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15 **Why are the results of the specific heat capacity practical not exact?**

- **A** energy escapes to the room
- **B** the thermometer adds energy
- **C** the block gains mass as it heats
- **D** the heater makes extra energy

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16 **How much energy is needed to heat 2 kg of a substance with a specific heat capacity of 900 J per kg per degree Celsius by 10 degrees Celsius?**

- **A** 18000 J
- **B** 1800 J
- **C** 36000 J
- **D** 9000 J

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

- A 1 g/cm³
- B 100 g/cm³
- C 0.5 g/cm³
- D 2 g/cm³

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18 **A material has a density of 5 g per cubic centimetre. What is the mass of 10 cubic centimetres of it?**

- A 50 g
- B 25 g
- C 15 g
- D 100 g

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19 **A 10 kg mass of ice melts. The specific latent heat of fusion of ice is 200 J/kg. How much energy is needed?**

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

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20 **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 4.6 g/cm³
- C 0.8 g/cm³
- D 1.6 g/cm³

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21 **A 10 kg block has a specific heat capacity of 200 J/kg degrees Celsius. Its temperature rises by 20 degrees Celsius. How much energy is needed?**

- A 40000 J
- B 80000 J
- C 40500 J
- D 20000 J

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22 **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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23 **What happens to internal energy when a substance is heated?**

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

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

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

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25 **How much energy is needed to heat 4 kg of a substance with a specific heat capacity of 900 J per kg per degree Celsius by 10 degrees Celsius?**

A 36000 J

B 3600 J

C 72000 J

D 18000 J

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ANSWER KEY

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

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