

Name:

Date:

P3 - Test 4  
PARTICLE MODEL OF MATTER  
Intermediate

**GCSE**

PHYSICS

AQA - Combined Science

Mark

Grade

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### Materials

For this paper you must have:

- Ruler
- Pencil and Rubber
- Scientific calculator, which you are expected to use when appropriate

### Instructions

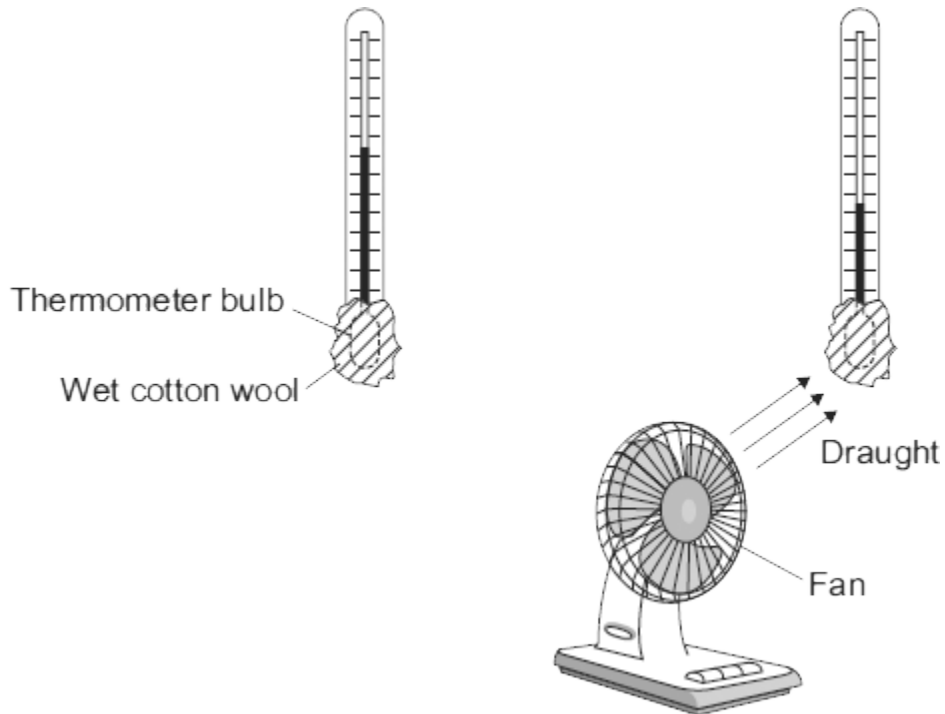
- Answer all questions
- Answer questions in the space provided
- All working must be shown

### Information

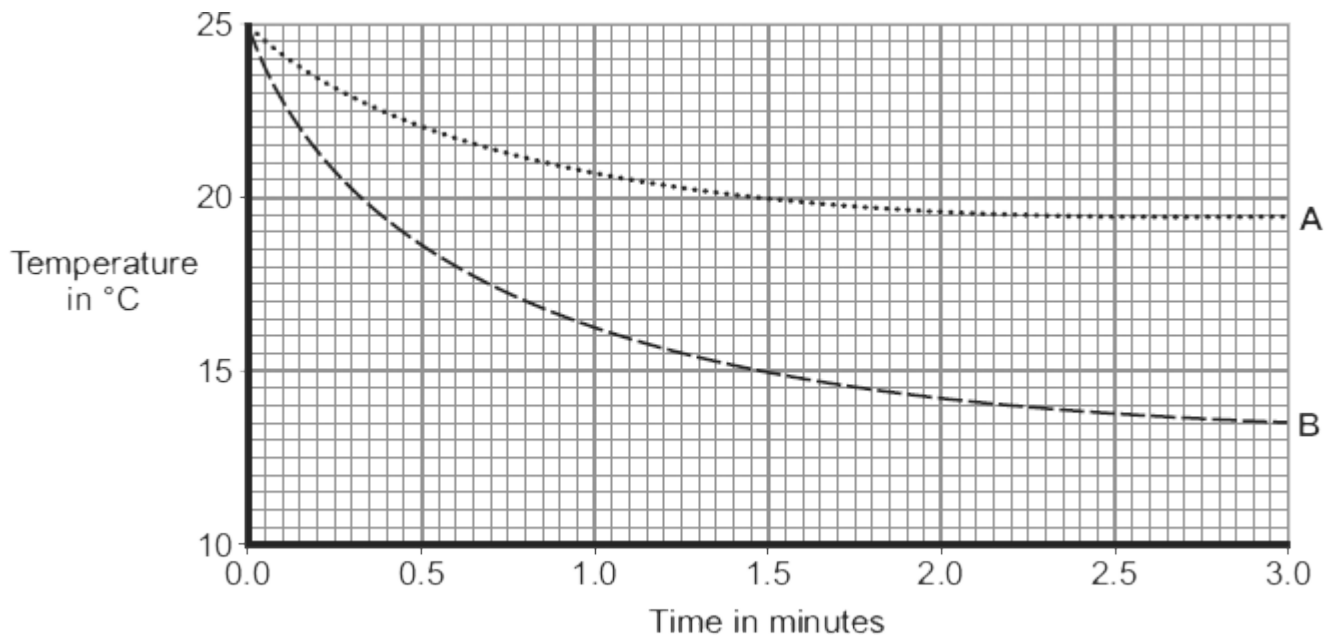
- The marks for the questions are shown in brackets

1.

The diagram shows two thermometers. The bulb of each thermometer is covered with a piece of wet cotton wool. One of the thermometers is placed in the draught from a fan.



The graph shows how the temperature of each thermometer changes with time.



- (a) Which of the graph lines, **A** or **B**, shows the temperature of the thermometer placed in the draught?

Write the correct answer in the box.

Explain, in terms of evaporation, the reason for your answer.

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**(3)**

- (b) A wet towel spread out and hung outside on a day without wind dries faster than an identical wet towel left rolled up in a plastic bag.

Explain why.

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**(2)**

**(Total 5 marks)**

2.

In this question you will be assessed on using good English, organising information clearly and using specialist terms where appropriate.

The information in the box is about the properties of solids and gases.

Solids:

- have a fixed shape
- are difficult to compress (to squash).

Gases:

- will spread and fill the entire container
- are easy to compress (to squash).

Use your knowledge of kinetic theory to explain the information given in the box.

You should consider:

- the spacing between the particles
- the movement of individual particles
- the forces between the particles.

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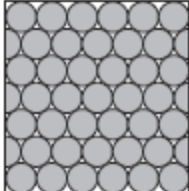
Extra space \_\_\_\_\_  
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(Total 6 marks)

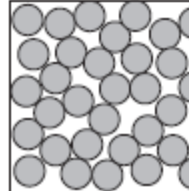
3.

In this question you will be assessed on using good English, organising information clearly and using specialist terms where appropriate.

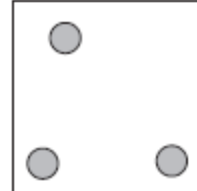
The diagram shows the arrangement of particles in a solid, a liquid and a gas.



Solid



Liquid



Gas

Use the diagram above and your own knowledge to compare solids, liquids and gases in terms of their particles.

You should include information about the arrangement, movement and energy of the particles.

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**(Total 6 marks)**

**4.**

Solid, liquid and gas are three different states of matter.

- (a) Describe the difference between the solid and gas states, in terms of the arrangement and movement of their particles.

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**(4)**

(b) What is meant by 'specific latent heat of vaporisation'?

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(2)

(c) While a kettle boils, 0.018 kg of water changes to steam.

Calculate the amount of energy required for this change.

Specific latent heat of vaporisation of water =  $2.3 \times 10^6$  J / kg.

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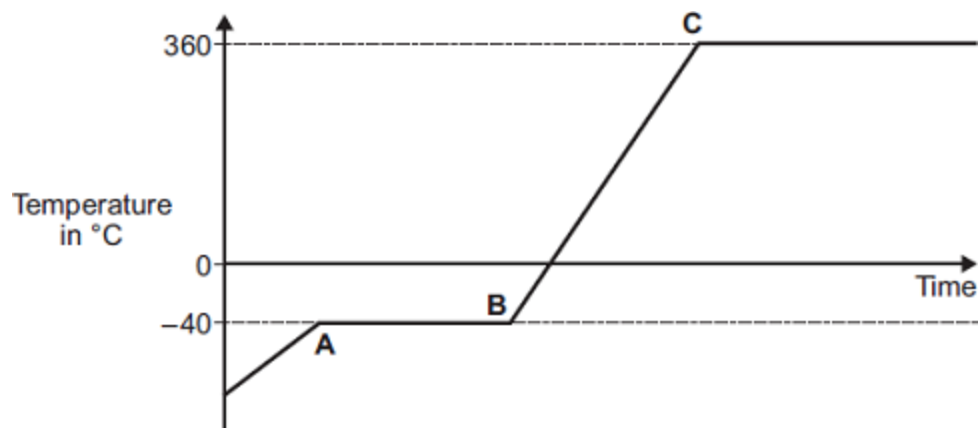
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Energy required = \_\_\_\_\_ J

(2)

(d) The graph shows how temperature varies with time for a substance as it is heated.

The graph is **not** drawn to scale.



Explain what is happening to the substance in sections **AB** and **BC** of the graph.

Section **AB** \_\_\_\_\_

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Section **BC** \_\_\_\_\_

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(4)  
(Total 12 marks)