Particle model of matter

Physics Paper 1 | 30 quick questions

GCSE science knowledge recall

Answer online, marked instantly

Name: _____ **Date:** _____ **Score:** _____ **/ 30**

1 What is the name for the mass per unit volume of a material? Answer in one word.

2 Complete the word equation: density = mass ÷ ...

3 What is the SI unit of density? Give the unit, not the name.

4 A block has a mass of 6 kg and a volume of 0.002 m^3. What is its density in kg/m^3?

5 In which state of matter are the particles furthest apart, so it usually has the lowest density?

6 In which state are the particles held in fixed positions in a regular pattern, only vibrating?

7 When ice melts into water, does the mass increase, decrease or stay the same?

8 What is the name for a gas changing directly into a solid without becoming a liquid first?

9 What is the name for a solid changing directly into a gas?

10 Is a change of state a physical change or a chemical change?

11 What is the name for the total kinetic energy and potential energy of all the particles in a system? Answer in two words.

12 Heating a substance raises the internal energy. If the state does not change, what else rises? Answer in one word.

13 While a solid is melting, does its temperature rise, fall or stay the same?

14 Which store of the particles increases while a substance is melting at constant temperature: kinetic or potential?

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15 What is the name for the energy needed to raise the temperature of 1 kg of a substance by 1 °C? Answer in three words.

16 In $\Delta E = m\ c\ \Delta\theta$, what does the symbol $\Delta\theta$ stand for? Answer in three words.

17 How much energy, in joules, raises 2 kg of a liquid with specific heat capacity 1000 J/kg °C by 5 °C?

18 What is the name for the energy needed to change the state of 1 kg of a substance with no change in temperature? Answer in three words.

19 What is the specific latent heat called for the change from solid to liquid?

20 What is the specific latent heat called for the change from liquid to vapour?

21 How much energy, in joules, is needed to melt 0.5 kg of a solid with specific latent heat 300 000 J/kg?

22 What is the unit of specific latent heat?

23 If a gas is heated at constant volume, what happens to the average kinetic energy of its particles?

24 A sealed container of gas is warmed with the volume kept the same. What happens to the pressure?

25 Explain in one sentence how gas particles cause pressure on the walls of a container.

26 A fixed mass of gas at constant temperature is squashed into a smaller volume. What happens to its pressure?

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27 For a fixed mass of gas at constant temperature, pressure × volume = ...? Answer in one word.

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28 A gas at 100 kPa has a volume of 3 m^3. At the same temperature it is compressed to 1 m^3. What is the new pressure in kPa?

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29 When a bicycle pump quickly compresses air, work is done on the gas. What happens to the temperature of the gas?

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30 Explain in one sentence why doing work on a gas raises its temperature.

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