



Subject: Grade 8 Natural Sciences

Topic: Natural Sciences: Exam Term 2

Total: 112 Marks

1. true 2 marks

Explanation:

Glucose and oxygen combine during the process of respiration to form energy, carbon dioxide and water.

2. float 3 marks

Explanation:

If it is more dense than the liquid it will sink.

3. B: 5 g/cm^3 4 marks

Explanation:

density = mass/volume

5 kg = 5000 g (the mass must be converted to grams)

$D = m/V$

$= 5000 \text{ g}/1000 \text{ cm}^3$

$= 5 \text{ g/cm}^3$

4. buffalo | grass 4 marks

Explanation:

Grazers are grass eaters. A giraffe eats the leaves of shrubs and trees.

5. solid 3 marks

Explanation:

These forces can be strong for example in a solid or very weak for example in a gas.

In a solid the forces are so strong that the particles can only vibrate, In a gas the forces are weak enough for the particles to move completely apart and move around freely.

6. particles | closer 4 marks

Explanation:

The particles of iron are packed more closely making iron more dense than plastic.

7. C: calcium hydroxide and water 4 marks

Explanation:

Calcium hydroxide is completely soluble in water and forms a clear solution.

8. oxygen 3 marks

Explanation:

This can be tested by means of a glowing splint. The glowing splint will burst into a flame, providing the evidence of oxygen gas.

9. false 2 marks

Explanation:

Gas is only produced at the positive electrode. This gas is chlorine.

10. B: NH₃ 4 marks

Explanation:

11. community | communities 3 marks

Explanation:

An example of a community would be eland and giraffe living in the same area or ecosystem.

12. neutrons | protons 4 marks

Explanation:

If an atom has 11 protons and 12 neutrons, then its mass number will be:

$$\begin{aligned} \text{protons} + \text{neutrons} &= 11 + 12 \\ &= 23 \end{aligned}$$

13. kinetic | kinetic energy 3 marks

Explanation:

The heat energy causes the particles to vibrate more rapidly. This movement is known as **kinetic energy**.

14. C: A and C 4 marks

Explanation:

During the process of photosynthesis sunlight is absorbed by the chlorophyll of leaves. This energy is used to convert carbon dioxide, absorbed from the air, and water, absorbed from the soil, into glucose.

15. to the same | habitat 4 marks

Explanation:

16. more | spaces will be larger

4 marks

Explanation:

This is the case with gases.

Because the forces of attraction are weak, and the particles have a lot of kinetic energy, the particles are far apart and the spaces are large.

17. false

2 marks

Explanation:

When the glassware expands, it becomes wider. The reading will then be less because the glassware is wider.

18. B: A, B and D

4 marks

Explanation:

The gas particles have less energy, move slower and the space between them decreases.

This happens if the gas is **cooled** or **compressed**.

19. evaporation

3 marks

Explanation:

Energy is added to the liquid particles. This causes them to move apart and a change of phase occurs from liquid to gas.

20. false

2 marks

Explanation:

When a material is **cooled** the particles **move less**.

The amount of particles stay the same. The only thing that happens is that the space between the particles gets smaller.

21. beryllium | beryllium

3 marks

Explanation:

Beryllium is a chemical element with 4 protons.

22. C: B and C

4 marks

Explanation:

The producer is at the start of the food chain since it produces its own food. The food chain ends with the decomposer that feeds off dead organic matter and then makes the nutrients available to the producers.

23. false 2 marks

Explanation:

Carbon dioxide passes from the air into the leaf through the stomata. Oxygen passes from the plant into the atmosphere through the stomata. This all occurs during photosynthesis.

24. C: the forces between the salt particles are broken 4 marks

Explanation:

In order for the particles of the solid to mix with the particles of the water, the forces between the solid particles need to be broken. This requires energy, and this energy is obtained from the water or surroundings.

Water does have spaces between its particles, which allows the copper ions (Cu^{2+}) and sulphate ions (SO_4) of copper sulphate to move between the water particles.

25. D: one atom of carbon and two atoms of oxygen. 4 marks

Explanation:

At room temperature carbon dioxide is a gas. It comprises of molecules, each molecule has one carbon atom and two oxygen atoms.

It's formula is CO_2

26. place the electrodes into the glass beaker | pour in enough copper chloride solution to cover the electrodes | close the circuit 6 marks

Explanation:

27. further apart | added energy | cooler | removed energy | move closer together 10 marks

Explanation:

The particles in **A** are **further apart** due to **added energy**. (**A** is in a warmer environment, the temperature is higher than in **B**.)

To bring the temperature **down** to the level in **B**, the thermometer was placed in a **cooler** environment. This, then **removed energy** causing the particles to **move closer together**.

28. false 2 marks

Explanation:

A molecule of ammonia has the formula NH_3 . It is made up of the elements nitrogen (N) and hydrogen (H). It has one atom of nitrogen and three atoms of hydrogen.

29. omnivores | omnivore 3 marks

Explanation:

30. melting | liquid | ice | water

8 marks

Explanation:

This process is called **melting**.

Energy is supplied and this causes the particles of the solid to vibrate more rapidly, to the point where they slide over one another. When this happens the solid changes to a liquid.

Total: 112 Marks