



Subject: Grade 8 Natural Sciences

Topic: Natural Sciences: Term 2 - Exam 1

Total: 106 Marks

1. 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 CO₂

2. B: NH₃

4 marks

Explanation:

3. beryllium | beryium

3 marks

Explanation:

Beryllium is a chemical element with 4 protons.

4. inflate

3 marks

Explanation:

Adding air pressure to a deflated balloon will cause it to inflate, unless there is a hole in the balloon. A punctured balloon can't maintain pressure inside it.

5. oxygen | oxygen gas

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.

6. 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.



7. 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.

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

Explanation:

density = mass/volume

$5 \text{ kg} = 5000 \text{ g}$ (the mass must be converted to grams)

$D = m/V$

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

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

9. kinetic | kinetic energy 3 marks

Explanation:

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

10. 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**.

11. particles | closer 4 marks

Explanation:

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

12. force 3 marks

Explanation:

Pressure is force per unit area. Force is the push and pull that makes an object move.

13. omnivores | omnivore 3 marks

Explanation:

Omnivores are animals that eat both plants and other animals. Humans are omnivores.

14. buffalo | grass 4 marks

Explanation:

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

15. C: calcium hydroxide and water 4 marks

Explanation:

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

16. neutrons | protons 4 marks

Explanation:

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

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

17. false 2 marks

Explanation:

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

18. trophic level | trophic level. 3 marks

Explanation:

An example of a trophic level would be the producers, the lowest trophic level in any food chain.

19. community | communities 3 marks

Explanation:

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

20. false 2 marks

Explanation:

A molecule of ammonia is comprised of **two** elements, namely nitrogen (N) and hydrogen (H). It has the formula NH₃. This means that it has one nitrogen atom and three hydrogen atoms.

21. 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.

22. true 2 marks

Explanation:

This is why the pressure in a tyre / balloon increases when you pump more air into it. The more pressure, the more it inflates.

23. 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.

24. energy 3 marks

Explanation:

The energy is absorbed by the plant and stored in the form of food. As the food is eaten there is an energy transfer from what is eaten to the consumer.

25. false 2 marks

Explanation:

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

26. 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.

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. to the same | habitat 4 marks

Explanation:

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

Explanation:

30. 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.

Total: 106 Marks