

C4 Revision Questions

Question 1 of 50

- What is the charge of an electron, proton and neutron?

Answer 1 of 50

- $-1, +1, 0$

Question 2 of 50

- What is an isotope?

Answer 2 of 50

- 2 atoms with the same atomic number with different mass number

Question 3 of 50

- What is the atomic number of Mg and what does it tell us?

Answer 3 of 50

- 12, tell us the number of protons in magnesium

Question 4 of 50

- What is the mass number of fluorine and what does it tell us?

Answer 4 of 50

- 19, and tells us the number of protons and neutrons.

Question 5 of 50

- Why are atoms neutral?

Answer 5 of 50

- Atoms have the same number of protons and electrons

Question 6 of 50

- How many atoms are there in one molecule of H_2SO_4 ?

Answer 6 of 50

- 7

Question 7 of 50

- What is the difference between an atom and an ion?

Answer 7 of 50

- An ion is an atom that has gained or lost electrons

Question 8 of 50

- What is the electronic structure of magnesium? Atomic number = 12

Answer 8 of 50

- 2.8.2

Question 9 of 50

- Explain how metals and non-metals combine, and what is this bonding called?

Answer 9 of 50

- When a metal donates electrons to a non-metal, ionic bonding

Question 10 of 50

- Why does solid Sodium Chloride **not** conduct electricity?

Answer 10 of 50

- Ions have a fixed position

Question 11 of 50

- When does sodium chloride conduct electricity? Why?

Answer 11 of 50

- When molten or dissolved. Because ions are able to move

Question 12 of 50

- What is meant by covalent bonding?

Answer 12 of 50

- Sharing of electrons.

Question 13 of 50

- Define the term single bond and double bond

Answer 13 of 50

- Single bond = 2 atoms sharing a pair of electrons. Double = 4 electrons shared between 2 atoms

Question 14 of 50

- MgO is ionic and CO₂ is covalent, which has a higher boiling point? Why?

Answer 14 of 50

- MgO because it's held together by ionic bonds

Question 15 of 50

- State an element in the same group and period as lithium.

Answer 15 of 50

- Group = Na, k, Rb, Cs, Fr
- Period = Be, B, C, N, O, F, Ne
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Question 16 of 50

- Define the terms oxidation and reduction in terms of electron movement

Answer 16 of 50

- Oxidation is loss of electrons. Reduction is Gain of electrons.

Question 17 of 50

- How does the reactivity change going down group 1? Why?

Answer 17 of 50

- It increases due to increased nuclear shielding making electrons easier to escape

Question 18 of 50

- What colour does lithium chloride make when it burns?

Answer 18 of 50

- Red

Question 19 of 50

- Describe the reactivity of the halogens going down the group, and why?

Answer 19 of 50

- Decreases due to increased nuclear shielding making it more difficult to attract electrons

Question 20 of 50

- What would be the products if chlorine reacted with potassium bromide?

Answer 20 of 50

- Potassium chloride and bromine

Question 21 of 50

- State a use of iodine, bromine and chlorine

Answer 21 of 50

- Sterilising wounds, pesticides, disinfecting water

Question 22 of 50

- What colour are the following compounds.
Iron (II), Iron (III), copper

Answer 22 of 50

- Green, Brown, Blue

Question 23 of 50

- Define thermal decomposition

Answer 23 of 50

- Breaking down a substance using heat

Question 24 of 50

- What is a super conductor?

Answer 24 of 50

- Conducts electricity with no resistance.

Question 25 of 50

- What would be formed if silver nitrate reacted with sodium chloride? And what colour would be formed?

Answer 25 of 50

- Sodium nitrate and silver chloride (in a white precipitate)

Question 26 of 50

- How can you work out the number of P,N and E using the periodic table

Answer 26 of 50

- Number of P&E = atomic number
- Number of N = mass number – atomic number

Question 27 of 50

- What is the electronic structure of calcium and fluorine?

Answer 27 of 50

- Ca = 2.8.8.2
 - F = 2.7

Question 28 of 50

- What is an Ion?

Answer 28 of 50

- An ion is positively or negatively charged atom or group of atoms

Question 29 of 50

- How many electrons can the first 3 shells hold

Answer 29 of 50

- 1st shell = 2
 - 2nd = 8
 - 3rd = 8

Question 30 of 50

- Why do metals form positive ions?

Answer 30 of 50

- Because they lose electrons

Question 31 of 50

- Why do non-metals form negative ions?

Answer 31 of 50

- Because they gain electrons

Question 32 of 50

- Describe the structure of sodium chloride

Answer 32 of 50

- Giant ionic lattice, in which positive ions are strongly attracted to negative ions

Question 33 of 50

- Why is the melting point of sodium chloride lower than magnesium oxide?

Answer 33 of 50

- Magnesium donates 2 electrons, forming stronger ionic bonds.

Question 34 of 50

- What are the two main types of bonding?

Answer 34 of 50

- Ionic and covalent

Question 35 of 50

- Give an example of simple molecules and describe their physical properties

Answer 35 of 50

- Carbon dioxide and water. Have low melting points and do not conduct electricity.

Question 36 of 50

- How does the group number relate to the number electrons in the outer shell

Answer 36 of 50

- Group number is the same as number of electrons in outer shell. E.g. Group 1 = 1 electron. Group 7 = 7 electrons in outer shell

Question 37 of 50

- Why are group 1 elements known as the alkali metals?

Answer 37 of 50

- They produce an alkali (metal hydroxide) when they react with water

Question 38 of 50

- What colour do the following salts burn:
lithium, sodium, potassium.

Answer 38 of 50

- Red, yellow, lilac

Question 39 of 50

- How would rubidium or caesium react compared with lithium?

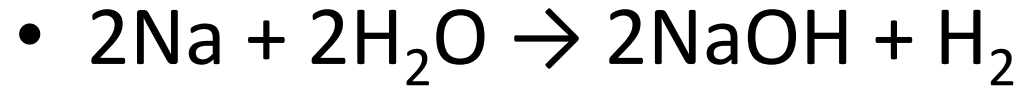
Answer 39 of 50

- Would react more vigorously as they are further down the group

Question 40 of 50

- What is the symbol equation for the reaction of sodium with water?

Answer 40 of 50



Question 41 of 50

- How can you carry out a flame test?

Answer 41 of 50

- use of moistened flame test wire
- • flame test wire dipped into solid sample
- • flame test wire put into blue Bunsen flame
- • colours of the flames.

Question 42 of 50

- What are group 7 elements also known as?

Answer 42 of 50

- Halogens

Question 43 of 50

- Give some uses of chlorine and iodine

Answer 43 of 50

- • chlorine is used to sterilise water
- • chlorine is used to make pesticides and plastics
- • iodine is used to sterilise wounds.

Question 44 of 50

- Describe the physical appearance of the group 7 elements at room temperature

Answer 44 of 50

- • chlorine is a green gas
- • bromine is an orange liquid
- • iodine is a grey solid.

Question 45 of 50

- What is the equation for the reaction between lithium and bromine?

Answer 45 of 50

- Lithium + bromine \rightarrow Lithium Bromide

Question 46 of 50

- What is the test for carbon dioxide?

Answer 46 of 50

- Turns limewater cloudy

Question 47 of 50

- Describe what a precipitation reaction is

Answer 47 of 50

- Reaction between 2 solutions that makes an insoluble solid

Question 48 of 50

- Give a use of iron and nickel as catalysts

Answer 48 of 50

- Iron = catalyst in haber process
- Nickle = catalyst when making margarine

Question 49 of 50

- What are the products made when heating FeCO_3

Answer 49 of 50

- Iron Oxide (FeO) and Carbon Dioxide (CO₂)

Question 50 of 50

- How are metals held together?

Answer 50 of 50

- Metallic bonds