

C1 Quick Revision Questions

Question 1

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- What is an element?

Answer 1

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- An element is a substance that cannot be broken down chemically.

Question 2

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- What is a compound?

Answer 2

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- A compound is a substance that contains at least two different elements, chemically combined in fixed proportions.

Question 3

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- What is the name of the compound made from sodium and oxygen?

Answer 3

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Sodium oxide

Question 4

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- How many atoms are in the molecule C_4H_{10} ?

Answer 4

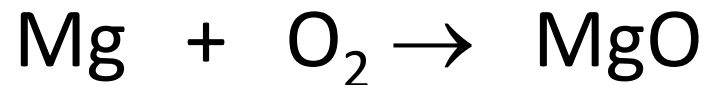
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There are 14 atoms in the molecule C_4H_{10}

Question 5

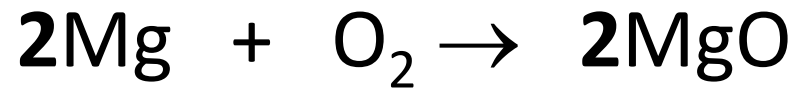
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- Balance the following equation:



Answer 5

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Question 6

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- Why can mixtures be easily separated?

Answer 6

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- Mixtures can be easily separated because the chemicals are not joined together.

Question 7

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- Give 4 examples of separating mixtures

Answer 7

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- Separation processes include:
- Filtration, distillation, crystallisation, chromatography

Question 8

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- How does filtration separate a mixture?

Answer 8

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- Filtration separates insoluble substances from soluble substances.

Question 9

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- How does distillation separate liquids?

Answer 9

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- Distillation separates liquids that have different boiling points.

Question 10

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- What technique is used to separate the different substances in crude oil?

Answer 10

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- Fractional distillation is used to separate the different substances in crude oil.

Question 11

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- Why has the atomic model changed over time?

- The atomic model has changed over time because new evidence is discovered which helps to improve the model.

Question 12

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- What is the relative charge on a proton?

Answer 12

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The relative charge on a proton is +1

Question 13

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- What is the relative charge on an electron?

Answer 13

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The relative charge on an electron is -1

Question 14

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- What is the relative charge on a neutron?

Answer 14

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The relative charge on a neutron is 0

Question 15

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- Where are protons and neutrons found in an atom?

Answer 15

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- Protons and neutrons are found in the nucleus of an atom.

Question 16

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- Where are electrons found in an atom?

Answer 16

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- Electrons are found in electron shells, surrounding the nucleus.

Question 17

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- An atom is neutral – true or false?

Answer 17

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- True

Question 18

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- What is the relative mass of an electron?

Answer 18

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- The relative mass of an electron is 0.0005

Question 19

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- What is the relative mass of a proton?

Answer 19

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- The relative mass of a proton is 1

Question 20

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- What is the relative mass of a neutron?

Answer 20

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The relative mass of a neutron is 1.

Question 21

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- What is an ion?

Answer 21

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An ion is a charged particle.

Question 22

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- What is the mass number of an atom?

Answer 22

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- The mass number of an atom is the total number of protons and neutrons.

Question 23

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- What is the atomic number of an atom?

Answer 23

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The atomic number is the number of proton in an atom.

Question 24

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- What is the atomic number of Carbon?

Answer 24

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The atomic number of Carbon is 6

Question 25

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- What is the mass number of Sodium?

Answer 25

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The mass number of Sodium is 23

Question 26

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- What is an isotope?

Answer 26

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- Isotopes are atoms with the same number of protons but with a different number of neutrons.

Question 27

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- What is the symbol for relative atomic mass?

Answer 27

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- The symbol for relative atomic mass is A_r

Question 28

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- How do you calculate relative atomic mass A_r ?

Answer 28

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- $A_r = \frac{(\text{mass of 1st isotope} \times \% \text{ of 1st isotope}) + (\text{mass of 2nd isotope} \times \% \text{ of 2nd isotope})}{100}$

Question 29

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- What is the definition of relative atomic mass?

Answer 29

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- Relative atomic mass of an element is the average mass of different isotopes of an element.

Question 30

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- What is the maximum number of electrons in the first shell of an atom?

Answer 30

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- There is a maximum of 2 electrons in the first shell of an atom.

Question 31

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- What is the maximum number of electrons in the 2nd shell of an atom?

Answer 31

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- The maximum number of electrons in the 2nd shell of an atom is 8.

Question 32

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- Oxygen has an atomic number of 8.
- What is Oxygen's electronic pattern?

Answer 32

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- Oxygen's electron pattern is 2,6

Question 33

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- What are columns in the periodic table known as?

Answer 33

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- Columns in the periodic table are called groups.

Question 34

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- What are rows in the periodic table known as?

Answer 34

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- Rows in the periodic table are known as periods.

Question 35

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- How many electrons do group 1 elements have in their outer shell?

Answer 35

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- Group 1 elements have 1 electron in their outer shell.

Question 36

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- Which Scientist noticed that sometimes three elements had similar properties?

He noticed patterns with:

- Lithium, Sodium and Potassium
- Calcium, Strontium and Barium
- Chlorine, Bromine and Iodine

Answer 36

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- Dobreiner noticed sometimes three elements had similar properties. These are known as 'Dobreiner triads'

Question 37

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- Which Scientist called their theory the 'law of octaves'

Answer 37

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- John Newlands said that when he put the elements in atomic weight order there was often a pattern of similar properties every eight elements. He called his theory the 'law of octaves'.

Question 38

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- Which Scientist left gaps in his version of the periodic table and made predictions about elements that had not yet been discovered?
He grouped elements in groups of similar chemical behaviour.

Answer 38

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- Dmitri Mendeleev left gaps in his version of the periodic table and made predictions about elements that had not yet been discovered.

Question 39

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- Give 5 physical properties of metals

Answer 39

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- Metals are:
- Lustrous
- Hard
- Have a high density
- Have a high tensile strength
- Have high melting and boiling points
- Are good conductors of heat
- Have good electrical conductivity

Question 40

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- Give 5 physical properties of non-metals

- Non-metals are:
- Dull
- Soft, brittle or gases
- Low density
- Low or no tensile strength or gas
- Low melting point and boiling point
- Poor or no thermal conductivity
- Poor or non conductors of electricity

Question 41

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- Where are metals found on the periodic table?

Answer 41

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- Metals are found on the left hand side and centre of the periodic table.

Question 42

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- Where are non-metals found on the periodic table?

Answer 42

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- Non-metals are found on the right hand side of the periodic table.

Question 43

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- What properties do group 0 have in common?

Answer 43

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- Group 0 are all gases
- They are all unreactive

Question 44

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- Why do group 0 elements exist as single atoms?

Answer 44

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- Group 0 atoms all have 8 electrons in their outer shell so they exist as single atoms.

Question 45

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- Give the word equation for the reaction between sodium and water

Answer 45

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- Sodium + water \rightarrow sodium hydroxide + hydrogen

Question 46

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- What is the trend in reactivity of group 1 as you go down the group?

Answer 46

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- Group 1 elements get more reactive as you go down the group.

Question 47

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- What is the trend in reactivity of Group 7 as you go down the group?

Answer 47

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- The group 7 elements decrease in reactivity as you go down the group.

Question 48

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- Where are the transition elements found on the periodic table?

Answer 48

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- The transition elements are found in the middle of the periodic table.

Question 49

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- Transition elements are often catalysts. What is a catalyst?

Answer 49

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- Catalysts change the rate of a chemical reaction without taking part in the reaction as a reactant. Catalysts are unchanged by the reaction.

Question 50

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- What does Fe(II) mean?

Answer 50

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- Fe(II) means that iron has lost two electrons to make a 2+ ion