

PiXL Independence – Level 1
Multiple Choice Questions
GCSE Chemistry – Atomic structure and the periodic table

INSTRUCTIONS

Score: /20

- **Read the question carefully.**
 - **Circle the correct letter.**
 - **Answer all questions**
1. The centre of an atom is called the:
 - a. Nucleus
 - b. Neutron
 - c. Shell
 - d. Centre

 2. The sub-atomic particles found in the centre of an atom are:
 - a. Electrons and neutrons
 - b. Protons and electrons
 - c. Protons and neutrons
 - d. Protons and nucleus

 3. The charge of the centre is:
 - a. Positive
 - b. Negative
 - c. Neutral
 - d. Positive and negative

 4. An isotope always has the same number of:
 - a. Electrons
 - b. Neutrons
 - c. Protons
 - d. Atoms

 5. Isotopes of an element have a different number of:
 - a. Electrons
 - b. Neutrons
 - c. Protons
 - d. Atoms

 6. Elements in the same group have:
 - a. Different properties
 - b. The same number of outer shell electrons
 - c. The same number of electron shells
 - d. The same number of protons

 7. Elements in the same period have:

- a. The same properties
 - b. The same number of outer shell electrons
 - c. The same number of electron shells
 - d. The same number of protons
8. Elements with the same number of outer shell electrons have:
- a. The same properties
 - b. Different properties
 - c. The same number of electron shells
9. Mendeleev organised his periodic table by:
- a. Atomic number
 - b. Proton number
 - c. Electron number
 - d. Atomic mass
10. The reactivity of group 1 increases:
- a. As you go down the group
 - b. As you go up the group
 - c. It does not change
 - d. Until potassium, then it stays the same
11. The reactivity of group 7 increases:
- a. As you go down the group
 - b. As you go up the group
 - c. It does not change
 - d. Until bromine then it stays the same
12. The charge of the electron is:
- a. Positive
 - b. Negative
 - c. Neutral
 - d. Positive and negative
13. Group 1 metals are:
- a. Reactive with water and hard to cut
 - b. Reactive with water and soft to cut
 - c. Not reactive with water and hard to cut
 - d. Not reactive with water and soft to cut
14. Group 0 elements:
- a. Are all solids at room temperature
 - b. Are all unreactive as they have a full outer shell of electrons
 - c. Are all liquids at room temperature
 - d. Are all very reactive as they have a full outer shell of electrons
15. Group 1 and Group 7 elements reactive together because:
- a. They are metals and none metals
 - b. They can transfer one electron to complete both outer shells
 - c. They are all very reactive
 - d. The proton numbers are compatible

16. Properties of transition metals include:
- Strong, low melting points with a high density
 - Weak, low melting points with a high density
 - Strong, high melting point with a low density
 - Strong, high melting point with a high density
17. A lithium atom has:
- 3 protons, 3 electrons and 4 neutrons
 - 3 protons, 4 electrons and 3 neutrons
 - 3 protons, 3 electrons and 7 neutrons
 - 3 protons, 7 electrons and 7 neutrons
18. The modern periodic table is arranged by:
- Mass number
 - Electron number
 - Atomic mass
 - Atomic number
19. The correct word equation for lithium reacting with iodine is:
- Lithium + Iodine \rightarrow Lithium iodine + water
 - Lithium + Iodine \rightarrow Lithium iodide
 - Lithium + Iodine \rightarrow Lithium iodide + water
 - Lithium + Iodine \rightarrow Lithium iodine
20. The symbol equation for the reaction between lithium and iodine is:
- $\text{Li} + \text{I} \rightarrow \text{LiI} + \text{H}_2\text{O}$
 - $\text{Li} + \text{I}_2 \rightarrow \text{LiI}_2 + \text{H}_2\text{O}$
 - $2\text{Li} + \text{I}_2 \rightarrow 2\text{LiI}_2$
 - $2\text{Li} + \text{I}_2 \rightarrow 2\text{LiI}$

PiXL Independence – Level 2
5 questions 5 sentences 5 words
GCSE CHEMISTRY – Atomic structure and the periodic table

INSTRUCTIONS

- For each statement, use either the suggested website or your own text book to write a 5-point summary. In examinations, answers frequently require more than 1 key word for the mark, so aim to include a few key words.
- It is important to stick to 5 sentences. It is the process of selecting the most relevant information and summarising it that will help you remember it.
- Write concisely and do not elaborate unnecessarily, it is harder to remember and revise facts from a big long paragraph.
- Finally, identify 5 key words that you may have difficulty remembering and include a brief definition. You might like to include a picture to help you remember it.

Example:

QUESTION:	Explain the reactivity in Group 1.			
Sources:	Website – 1. http://www.bbc.co.uk/schools/gcsebitesize/science/aqa/fundamentals/theperiodictablerev2.shtml 2. http://www.s-cool.co.uk/gcse/chemistry/the-periodic-table/revise-it/group-i-and-group-ii			
	<ol style="list-style-type: none"> 1. The reactivity increases as you go down the group. 2. They have the same number of electrons in their outer shells. 3. The further down the group, the further away the electron is from the nucleus. 4. Therefore, the electron is better shielded and the attraction is weaker. 5. As a consequence, the electron is easier to remove. 			
Reactivity	attraction	Further away	weaker	remove

QUESTION 1:	Explain the trend in reactivity, melting points and density of group 1 and group 7 of the periodic table.
Sources:	Website – 1. https://www.youtube.com/watch?v=J7b2aBKa6-U 2. http://www.bbc.co.uk/education/guides/z3vwxnb/revision/4

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QUESTION 2:	Describe the sub atomic particles and their arrangement in the atom.
Sources:	Website – 1. https://tse2.mm.bing.net/th?id=OIP.SxZZQN5LZoRtrb4caYulVwEsD-&w=251&h=213&c=7&qlt=90&o=4&dpr=1.5&pid=1.7 2. http://chemistry.tutorcircle.com/inorganic-chemistry/atomic-structure.html

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QUESTION 3:	Explain how the arrangement of the periodic table is related to the electron arrangement in atoms.
Sources:	Website – 1. https://www.visionlearning.com/en/library/Chemistry/1/The-Periodic-Table-of-Elements/52 2. http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa_pre_2011/atomic/atomstrucrev5.shtml

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**QUESTION
4:**

Compare the general properties of transition metals and alkali metals.

Sources:

Website –

1. <http://www.gcsescience.com/pt20.htm>
2. <http://www.gcsescience.com/pt5.htm>

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QUESTION 5:	Describe metals and non-metals and explain the differences between their physical and chemical properties.
Sources:	Website – 1. https://www.thoughtco.com/metals-versus-nonmetals-608809 2. http://www.differencebetween.com/difference-between-metals-and-nonmetals/

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