Chemistry Quiz – **Who’ll be ‘Chemist of the Month’?**

**Section 1** – The Periodic Table

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| |  |  | | --- | --- | | 1. What does the number of protons in an atom determine? | | | |  |  | | --- | --- | |  | A Charge of Atom | |  | B Atomic Number | |  | C Mass Number | |  | D Name of Element | |  | | |
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| 1. Group 1 in the Periodic Table is called the: | |
| |  |  | | --- | --- | |  | A halogens. | |  | B noble gases. | |  | C alkali metals. | |  | D transition metals. | |  |
| 1. Group 7 in the Periodic Table is called the: | |
| |  |  | | --- | --- | |  | A halogens. | |  | B noble gases. | |  | C transition metals. | |  | D alkali metals. | |  |
| 1. Elements in the same group in the Periodic Table have the same: | |
| |  |  | | --- | --- | |  | A density. | |  | B number of occupied energy shells. | |  | C number of outer electrons. | |  | D number of protons. | |  |
| 1. Elements in the same period in the Periodic Table have the same: | |
| |  |  | | --- | --- | |  | A number of protons. | |  | B density. | |  | C number of outer electrons. | |  | D number of occupied energy shells | |  |

**Section 2** – Bonding & Structure

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| 1. In which of the following compounds do both ions have the same electron arrangement as argon? | |
| |  |  | | --- | --- | |  | A Magnesium oxide | |  | B Sodium sulfide | |  | C Calcium bromide | |  | D Calcium sulfide | |  |

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| 1. Which element is a solid at room temperature and consists of discrete molecules? | |
| |  |  | | --- | --- | |  | A Boron | |  | B Neon | |  | C Sulfur | |  | D Silicon | |  |

1. Which of the elements is most likely to have a covalent network structure?

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| **Element** | **Melting Point (K)** | **Boiling Point (K)** | **Density (g cm-3)** | **Conduction When Solid** |
| A | 317 | 553 | 1.82 | No |
| B | 933 | 2740 | 2.7 | Yes |
| C | 1683 | 2628 | 2.32 | No |
| D | 387 | 457 | 4.93 | No |

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| 1. Which type of structure is found in a substance melting at 1069°C which conducts electricity when molten, but not when solid? | |
| |  |  | | --- | --- | |  | A Ionic | |  | B Metallic | |  | C Covalent (discrete molecules) | |  | D Covalent (network structure) | |  |

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| 1. Which of the following structures is never found in compounds? | |
| |  |  | | --- | --- | |  | A Covalent Molecular | |  | B Monatomic | |  | C Covalent Network | |  | D Ionic | |  |

**Section 3** – Periodic Table Trends

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|  | Top of Form   |  |  | | --- | --- | | 11 Menedeleev is famous for producing the Periodic Table on which the modern version is based.  Which of the following statements is true? | | | |  |  | | --- | --- | |  | A Mendeleev swapped some elements round so that their atomic masses fitted the pattern. | |  | B Mendeleev organised the elements in order of their atomic number. | |  | C Mendeleev left gaps for elements which had not yet been discovered. | |  | D Mendeleev left gaps because some elements did not fit the pattern of reactivity. | |  |   Bottom of Form |

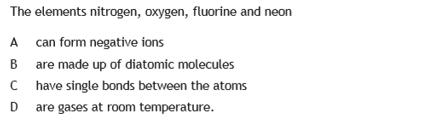
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| --- | --- |
| 1. Which of the following equations represents the first ionisation energy of magnesium? | |
| |  |  | | --- | --- | |  | A Mg (g) → Mg2+(g) + e- | |  | B Mg (g) → Mg+(g) + e- | |  | C Mg (s) → Mg+(g) + e- | |  | D Mg (g) → Mg2+(g) + 2e- | |  |

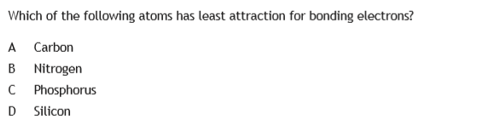
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| --- | --- |
| 1. Which of the following will **not** affect the first ionisation energy of an element? | |
| |  |  | | --- | --- | |  | A Atomic number | |  | B Screening effect | |  | C Atomic size | |  | D Atomic mass | |  |

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| 1. Why are no electronegativity values quoted for the Group 0 elements? | |
| |  |  | | --- | --- | |  | A Their electronegativities are too high for the scale. | |  | B They generally do not form bonds with other elements. | |  | C They have a value of zero. | |  | D They are unreactive non-metals. | |  |

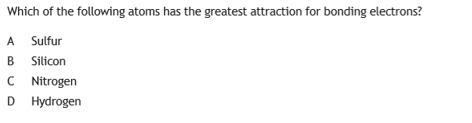
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| --- | --- |
| 1. Which of the following equations represents the first ionisation energy of fluorine? | |
| |  |  | | --- | --- | |  | A F-(g) → F (g) + e- | |  | B F2(g) → F+(g) + e- | |  | C F (g)  + e- → F-(g) | |  | D F (g) → F+(g) + e- | |  |

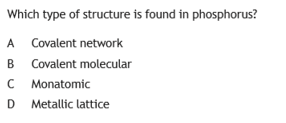
**Section 4** – SQA Questions

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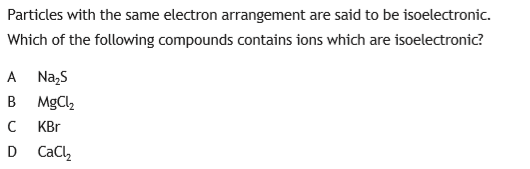


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