*Part (1): Multiple Choice Questions (16 Marks)*

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| The reactivity of group 2 elements are; | | | | 1 |
| Increase from bottom to top | B) | More than of group 1 elements | A) |  |
| Similar to group 1 | D) | Increase from top to bottom | C) |

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| The solubility of Be(OH)2 is less than the solubility of Ba(OH)2 because; | | | | 2 |
| They are ionic compounds | B) | They are covalent compounds | A) |  |
| They have the same sizes of ions | D) | The large difference in ions sizes | C) |

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| The hybridization of Be in BeCl2 (liquid) is; | | | | 3 |
| sp2 | B) | sp | A) |  |
| dsp2 | D) | sp3 | C) |

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| The missing product in the following reaction;  Mg + H2O ???? + H2 | | | | 4 |
| MgO | B) | Mg(OH)2 | A) |  |
| MgOH | D) | MgO2 | C) |

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| The oxidation state (number) of carbon can be; | | | | 5 |
| -4 only | B) | +4 only | A) |  |
| +5 | D) | Both +4 and -4 | C) |

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| The correct arrangements of Ga, In, and Tl as far as their oxidation state +3 as follow; | | | | 6 |
| Ga > In > Tl | B) | Tl > In > Ga | A) |  |
| Ga> Tl > In | D) | In > Ga > Tl | C) |

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| Group 13 elements are; | | | | 7 |
| All nonmetals | B) | All metals | A) |  |
| All three types | D) | Metalloids and metals | C) |

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| Phosphorous has three allotropes; they are; (write their names below) | | | | 8 |
|  | 3) |  | 1) |  |
|  |  |  | 2) |

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| Selenium can form six covalent bonds like in SeCl6 because; | | | | 9 |
| It is metal | B) | It is very large atom | A) |  |
| It has empty 3d orbitals | D) | It has empty 4d orbitals | C) |

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| The following nitrides; P3N5 and Ca3P2 respectively are; | | | | 10 |
| Covalent, ionic | B) | Ionic, covalent | A) |  |
| Both ionic | D) | Both covalent | C) |

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| One of the ways to prepare pure silicon is;  SiO2 + ??? Si + CO, the missing reactant is; | | | | 11 |
| CO2 | B) | C | A) |  |
| C2H2 | D) | CH4 | C) |

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| One of air pollutant is NO2 it is; | | | | 12 |
| Chalking | B) | poisonous | A) |  |
| React with hydrocarbons | D) | Form acid rain | C) |

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| We can't have nitrogen direct from air because; | | | | 13 |
| It exist as colored gas | B) | It exist as single atom | A) |  |
| Of its low percentage | D) | It exist as molecules | C) |

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| Graphite, *allotrope of carbon*, is conductive due to; | | | | 14 |
| The double bonds system | B) | The single bonds system | A) |  |
| The softness | D) | The black color | C) |

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| Cs is stronger reducing agent than Ba because ; | | | | 15 |
| Cs is larger than Ba | B) | They are in the same group | A) |  |
| Both have the same size | D) | Cs is smaller than Ba | C) |

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| Group 1 and 2 elements can' exist free in nature because they are; | | | | 16 |
| Nonmetals | B) | Metals | A) |  |
| Noble | D) | Reactive | C) |

*Part 2: answer the following questions (4 Marks)*

Q1: Complete the following table:

|  |  |
| --- | --- |
| *Name of the compounds* | *Formula* |
|  | BaO2 |
| Potassium sulfate |  |
|  | NaClO4 |
| Magnesium hydrogen phosphate |  |

Q2: Write the condensed electron configuration for the following elements; Cs, In, Si, and Sb.

|  |  |
| --- | --- |
| Electron configuration | Element |
|  | Cs |
|  | In |
|  | Si |
|  | Sb |