**Group I: Choose as required (16 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1) | The condensed electronic configuration of the element in group 14, period 6 is: | | | |
|  |  | *[Xe]5d106s26p2* |  | *[Kr] 5d106s15p2* |
|  | *[Kr]4f145d105s25p1* |  | *[Xe]4f145d106s26p2* |

**ــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2) | Group 1and 2 elements are: | | | |
|  |  | *metals* |  | *Nonmetals, all solids* |
|  | *Nonmetals, metals* |  | *Nonmetals, as solids, liquids, and gases* |

**ــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3) | The missing product in the following reaction; ***K + O2 ?*** is: | | | |
|  |  | *KO* |  | *K2O2* |
|  | *KO2* |  | *K2O* |

ـــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4) | Boron has new type of bonding it is: | | | |
|  |  | *3c-2e bond* |  | *3c-3e bond* |
|  | *2c-2e bond* |  | *4c-2e bond* |

ـــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5) | Elements of alkali metals are very good reducing agent because: | | | |
|  |  | *They are liquid* |  | *The 1st ionization is high* |
|  | *The 1st ionization is low* |  | *They are shiny metals* |

*ـــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6) | Nitrogen gas is unreactive because it: | | | |
|  |  | *is brown* |  | *is gas* |
|  | *has strong bonds* |  | *All correct* |

ـــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7) | There is no compound with the name fluorine oxide, this is because: | | | |
|  |  | *Fluorine is less electronegative* |  | *Oxygen is smaller than fluorine* |
|  | *Fluorine is more electronegative* |  | *Both in the same period* |

ـــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8) | Some elements of group 15 can form more than three covalent bonds due to : | | | |
|  |  | *The existence of filled d orbitals* |  | *The existence of empty f orbitals* |
|  | *The existence of half filled d orbitals* |  | *The existence of empty d orbitals* |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Group 2: Answer the following questions: (4 marks)**

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| --- | --- |
| 1) | Carbon has two allotropes, name them and explain the differences. Which of them is conductor and why?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 2) | Some nonmetal oxides are air pollutants, name some and explain their role in polluting the air. |
|  |  |