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General Certificate Of Education (Adv. Level) Examination, August 2023

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| ରසାୟନ ବିද୍ୟାଳୟ I |  |
| Chemistry I      |  |

02

S/E

I

1. Types of bonds present in an aqueous solution of Ammonium iodide are
- (a) Covalent bonds (b) Ionic bonds (c) Hydrogen bonds  
(d) Ion-dipole bonds (e) Dative bonds
- 1) only a, b, and d      2) only a, b, d, and e      3) only a, c and d  
4) only a, b, c and d      5) all a, b, c, d and e
- b.)

A, B, C, D and E are five successive non trans element in the periodic table. The second ionization energies are as follows.

|                            |      |       |       |       |       |
|----------------------------|------|-------|-------|-------|-------|
| Atomic number              | Z    | Z + 1 | Z + 2 | Z + 3 | Z + 4 |
| Element                    | A    | B     | C     | D     | E     |
| $I_2 / \text{KJ mol}^{-1}$ | 2680 | 3390  | 3370  | 3950  | 4560  |
| ( $\text{KJmol}^{-1}$ )    |      |       |       |       |       |

\*  $I_2$  = second ionization energy.

Z falls between 6 – 12.

- i.) Identify elements A, B, C, D and E

A ..... B ..... C .....

D ..... E .....

- ii.) Write down all possible oxidation numbers of B and a compound for each oxidation state.

[illegible]

- iii.) Answer the following questions based on A, B, C, D and E.

- I. The element which shows the highest electro negativity .....
- II. The element which shows the highest oxidation state .....
- III. The element which has the least first ionization energy .....
- IV. The element which has the smallest covalent radius .....