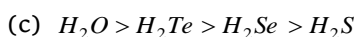
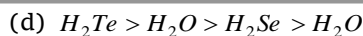
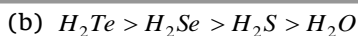


## Chemical Periodicity

## Self Evaluation Test - 15

- If the difference in electronegativities of two elements is very large, then
  - The bond is 50% ionic
  - The bond is 100% covalent
  - The bond is more covalent than ionic
  - The bond is more ionic than covalent
- Which of the following elements will have the lowest electron affinity
  - Nitrogen
  - Flourine
  - Chlorine
  - Phosphorus
- The correct order of second ionization potential of carbon, nitrogen, oxygen and fluorine is  
[IIT-JEE 1981; CBSE PMT 1991; MADT Bihar 1995; MP PMT 2003]
  - $C > N > O > F$
  - $O > N > F > C$
  - $O > F > N > C$
  - $F > O > N > C$
- Which of the following species has the highest ionisation potential [EAMCET 1998]
  - $Li^+$
  - $Mg^+$
  - $Al^+$
  - $Ne$
- Which of the following elements are analogous to the lanthanides [AIIMS 1998]
  - Actinides
  - Borides
  - Carbides
  - Hydrides
- Which of the order for ionisation energy is correct [CPMT 1999; CBSE PMT 2001]
  - $Be > B > C > N > O$
  - $B < Be < C < O < N$
  - $B < Be < C < N < O$
  - $B < Be < N < C < O$
- Modern periodic table is based on the atomic number of the elements. The experiment which proved the significance of the atomic number was [CBSE PMT 1989]
  - Millikan's oil drop experiment
  - Moseley's work on X-ray spectra
  - Bragg's work on X-ray diffraction
  - Discovery of X-rays by Rontgen
- Which one of the elements is most metallic [MP PMT 2002]
  - P
  - As
  - Sb
  - Bi
- For a p-block element, its 3d, 3s, 3p and 4s orbitals are completely filled and the differentiating electron goes to the 4p orbital. The element should have its atomic number in the range
  - 13 - 18
  - 21 - 26
  - 31 - 36
  - 49 - 54
- The most common lanthanide is [AFMC 1995]
  - Lanthanum
  - Cerium
  - Samarium
  - Plutonium
- In a period, elements are arranged in strict sequence of [CPMT 1989]
  - Decreasing charges in the nucleus
  - Increasing charges in the nucleus
  - Constant charges in the nucleus
  - Equal charges in the nucleus
- Some of the polar crystal when heated produce electric current. This phenomena is termed as [AMU 2001]
  - Ferroelectric effect
  - Phyroelectric effect
  - Antiferroelectric effect
  - Piezoelectric effect
- Which of the following pairs has elements containing same number of electrons in the outermost orbit [CPMT 1985]
  - $N - O$
  - $Na - Cl$
  - $Ca - Cl$
  - $Cl - Br$
- Coinage metals are present in [DCE 2000]
  - s-block
  - d-block
  - p-block
  - f-block
- In which of the following metal carbonate which metal carbonate is decomposed on heating [UPSEAT 1999]
  - $MgCO_3$
  - $Na_2CO_3$
  - $K_2CO_3$
  - $Pb_2CO_3$
- Which one of the following is the correct decreasing order of boiling point [AMU 2000]
  - $H_2O > H_2S > H_2Se > H_2Te$





# AS Answers and Solutions

(SET -15)

- (d) If the difference in electronegativities of two elements is very high then the bond is more ionic than covalent.
- (d) Phosphorus have the lowest electron affinity due to half filled  $p$  orbital, but in nitrogen electron affinity is greater than phosphorus because of large nuclear attraction in comparison with phosphorus.
- (c) The ionization potential increases across the period but the second ionization potential of oxygen is highest among them because after the removal of  $1e^-$  the  $2e^-$  is to be removed from half filled orbital which is difficult.
- (d) As, now the  $e^-$  is to be removed from stable configuration.  $Li^+$  has the highest ionisation potential due to its stability.
- (a) Actinides are homologous of Lanthanides.
- (b) Ionisation energy increases across the period but due to stable half filled configuration of VA group, its I.E. is more than VI-A group.
- (b) Moseley's work on X-ray spectra was proved the significance of the atomic number.
- (d) The metallic property of an element increases from top to bottom in group.  
 $P < As < Sb < Bi$
- (c)  $31-36 \Rightarrow Ga$  to  $Kr$ .
- (b) The most common lanthanide is cerium.
- (b) Increasing charges in the nucleus as atomic number increases across a period.
- (d) This phenomena is called piezoelectric effect.
- (d)  $Cl-Br$ . Both belong to VII-A group having  $7e^-$  in valence shell.
- (b) Copper, Silver and Gold are coinage metals
- (a)  $MgCO_3 \rightarrow MgO + CO_2$
- (c) Correct decreasing order of boiling point is,  
 $H_2O > H_2Te > H_2Se > H_2S$ .

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