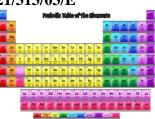
## NIOS/Acad./2021/313/03/E

## National Institute of Open Schooling Senior Secondary Course: Chemistry Chapter- 3 (Periodic Table and Periodicity in Properties) Worksheet-3



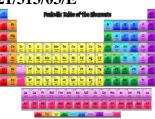
- 1. Refer the modern periodic table and answer the following questions.
- (i) The elements placed in group number 18 are called.....
- (ii) Alkali and alkaline earth metals are collectively called ......block metals.
- (iii) The general configuration for halogens is.....
- (iv) Name a p-block element which is a gas other than a noble gas or a hologen.
- (v) Name the groups that comprise the's' block of elements.
- (vi) Element number 118 has not yet been established, to which block, will it belong?
- (vii) How many elements should be there in total if all the 7s, 7p, 6d and 5f, blocks are tobe full?
- 2. Describe the variation of electron gain enthalpy and ionization enthalpy in the periodic table.
- 3. Which one have lower first ionization enthalpy and why?

i) Na or Ca ii) K or Ar iii)  $Na^+$  or Na

- 4. Which one have high electron gain enthalpy and why?
  - i)  $O^{-}$  or  $O^{2-}$  ii)  $O^{-}$  or S iii)  $N^{-}$  or P
- 5. Define the following:
- (a) Electron gain enthalpy (b) Ionization enthalpy (c) Ionic radius (d) Electronegativity.
- 6. What is electronegativity? How is it related to the type of bond formed?
- 7. Why is the electron gain enthalpy of Cl more in negative value as compared to that of F?
- 8. Define ionic radii. Arrange these ionic species in order of decreasing ionic radii.
  i) Na<sup>+</sup>, Mg<sup>2+</sup>, K<sup>+</sup>, Al<sup>3+</sup>ii) N<sup>3-</sup>, O<sup>2-</sup>, F<sup>-</sup>, Br<sup>-</sup>
- 9. Explain Why
- i) First ionization enthalpy of N is more than O.
- ii) Second electron gain enthalpy of O is negative.
- iii) All transition elements are d-block elements but all d-block elements are not transition elements.
- iv) N has positive electron gain enthalpy but O has negative electron gain enthalpy.

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10. Pl consider this part of periodic table and answer below given questions

| Group<br>Period | 1 | 2 | d-block<br>Elements | 13 | 14 | 15 | 16 | 17 | 18 |
|-----------------|---|---|---------------------|----|----|----|----|----|----|
| 2               |   | Α |                     |    | Μ  | F  | G  | X  |    |
| 3               | B |   |                     |    |    |    |    | Y  |    |
| 4               | R |   | S                   |    |    |    |    | Z  |    |
| 5               | 0 |   |                     | D  |    |    |    |    |    |
| 6               |   |   |                     |    |    |    |    |    | Q  |

- i) Which one may be a transition element?
- ii) What is the Family name of elements, XYZ ?
- iii) Which one is most reactive Metal?
- iv) Which one is most reactive non metal?
- v) Which one is also known as chalcogens?
- vi) Which one is alkali metal?
- vii) Which one is alkaline earth metal?
- viii) What is the valency of Q, X, N & P?
- ix) What is the formula of compound formed by reaction of A & F?
- x) Which one has smallest and which one has biggest size?

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