

CBSE TEST PAPER-02

CLASS - XI CHEMISTRY (Classification of Elements and Periodicity in Properties)

General Instruction:

- All questions are compulsory.
 - Marks are given alongwith their questions.
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1. Give the general characteristics of the long form of Modern periodic table? [1]
2. In short give the features of the seven periods. [1]
3. Define electronic configuration. [1]
4. What is the electronic configuration when elements are classified group wise? [1]
5. Give the main features of s-block elements. [2]
6. Give the main features of p-block elements. [2]
7. Give the main features of d-block elements. [2]
8. Give the main features of f-block elements. [2]

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[ANSWERS]

Ans1. General characteristics of the long form of Periodic table :-

- i) There are in all 18 vertical columns i.e. 18 groups in the long form periodic table.
- ii) There are groups numbered from 1 to 18 from the left.
- iii) There are seven horizontal rows called periods.
- iv) The elements of groups 1, 2 and 13 to 17 are called main group elements.
- v) The elements of group 3 to 12 are called transition elements.

Ans2. First period contains 2 elements, 1H and 2 He and it is the shortest period.

Second and third periods contain 8 elements each namely 3 Li to 10Ne and 11 Na to 18Ar and is a short period.

Fourth and fifth period contains 18 elements each namely 19K to 36Kr and 37Rb to 54Xe and is a long period.

Sixth period contains 32 elements namely 55Cs to 86Rn and is the longest period.

Seventh period is incomplete. It has all other elements starting with 87Fr onwards. Elements from 93 onwards are purely synthetic and are called trans-uranium elements and is incomplete period.

Ans3. The distribution of electrons into orbitals of an atom is electronic configuration.

Ans4. Elements in the same vertical column or group have similar valence shell electronic configurations, the same number of electrons in the outer orbitals, and similar properties.

Ans5. s – block elements :- The elements in which the last electron enters the s – orbital of their outer most energy level are called s – block elements. It has elements of groups 1 and 2. The general electronic configuration of s – block elements is ns^{1-2} .

Ans6. p – block elements : The elements in which the last electron enters the p – orbital of their outermost energy level are called p – block elements. It contains elements of group 13,14, 15, 16, 17 and 18 of the periodic table. General electronic configuration of p – block elements is $ns^2 np^{1-6}$.

Ans7. d – block elements :- The elements in which the last electron enters the d – orbitals of their last but one energy level constitute d – block elements. There block consists of the elements lying between s and p block starting from 4th period and onwards. They constitute groups 3 to 10 in the periodic table. General electronic configuration is $(n - 1) d^{1-10} ns^{1-2}$.

Ans8. f – block elements : The elements in which the last electron enters the f – orbital of their atoms are called f – block elements. In these elements the last electron is added to the third to the outermost energy level. These consist of two series of elements placed at the bottom of the periodic table known as Lanthanoid and actinoid series. General electronic configuration is $(n-2)f^{1-14} (n-1)d^{0-1} ns^2$.



Vidya Champ