CBSE TEST PAPER-01

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

General Instruction:

- All questions are compulsory.
- Marks are given alongwith their questions.

1. How many elements are known at present? [1]

2. Who was the first scientist to classify elements according to their properties? [1]

3. What is the basis of triad formation of elements? [1]

4. Stale the modern 'Periodic law'? [1]

5. Define and state Mendeleev's periodic law. [1]

6. How did Mendeleev arrange the elements? [2]

7. Name the two elements whose existence and properties were predicted by Mendeleev though they did not exist then. [2]

8. Describe the main features of Mendeleev's periodic table? [3]

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[ANSWERS]

Ans1. There are about 114 elements known at present.

Ans2. The German Chemist, Johann Dobereiner in early 1829 was the first to consider the idea of trends among properties of element.

Ans3. The middle element of each of the triads had an atomic weight about half way between the atomic weights of the other two. Also the properties of the middle element were in between those of the other two members. Dobereiner's relationship is known as the law of triads.

Ans4. The physical and chemical properties of the elements are periodic functions of their atomic numbers.

Ans5. Mendeleev's Periodic law states that

'The properties of the elements are periodic function of their atomic weights'.

Ans6. Mendeleev arranged elements in horizontal rows and vertical columns of a table in order of their increasing atomic weights in such a way that the elements with similar properties occupied the same vertical column or group.

Ans7. Mendeleev predicted not only the existence of gallium and germanium, but also described some of their general physical properties.

Ans8. (i) In Mendeleev table, the elements were arranged in vertical columns, and horizontal rows. The vertical columns were called groups and the horizontal rows were called periods.

(ii) There were in all eight groups. Group I to VIII. The group numbers were indicated by Roman numerals. Group VIII occupy three triads of the elements each i.e. in all nine elements.

(iii) There were seven periods to accommodate more elements the period 4, 5, 6 and 7 were divided into two halves. The first half of the elements were placed in the upper left corner and the second half in the lower right corner of each box.