

A PERIODIC TABLE EXERCISE

The code letters A to Z have been assigned to the first 26 elements in the short form periodic table (omitting the transition elements in period 4.) These code letters do not represent the chemical symbols nor have the letters been assigned in alphabetical order. Study the given clues based on experimental data. Then place the code letters in their correct positions in Table A and fill in the correct atomic number for each in Table B.

CLUES

1. The following elements belong together in families:
BFT, DGLZ, JNV, CMS, QXY, AEO, IPH, UKWR
2. If this atom formed ions, the ions for H would be +4 or -4.
3. PO_2 is the formula of an oxide.
4. G is a noble gas.
5. U is an alkali metal.
6. E has 5 electrons in its outermost energy level.
7. N has 2 valence electrons.
8. T has an outer electronic configuration of $4s^2 4p^1$.
9. Q is a halogen.
10. F has the smallest atomic mass in its family.
11. T is more metallic than B.
12. J has a lower ionization energy than V but a higher ionization energy than K.
13. P has the lowest first ionization energy in its family.
14. The atomic radius of S is greater than that of C.
15. Y is a liquid whereas Q is a gas at room temperature.
16. X boils at a lower temperature than Q.
17. W is a gas.
18. Atom Z has two neutrons.
19. D contains ten protons.
20. The electrons of atom G are distributed over three energy levels.
21. H is the least metallic in its group.
22. O has a higher boiling temperature than E.
23. A is more metallic than either O or E.
24. The atomic mass of V is less than that of J but more than that of N.
25. The atomic number of R is one greater than that of Z.
26. Atoms of K are larger than those of U.
27. M has an outer electronic configuration of $4s^2 4p^4$.

