

## Answer on Question #48947 – Chemistry – Inorganic Chemistry

### Question:

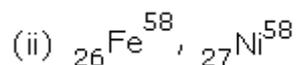
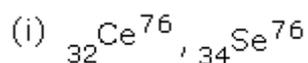
Define isobars and isotones and give one example of each.

### Answer:

#### Isobars

The isobars are elements, which are chemically different but physically same. So, isobars are atoms of different elements having the same atomic mass but different atomic number. Since their number of electrons is different, their chemical properties are different. The light nuclei have unstable isobars. Heavy nuclei have stable isobars and these occur in pairs. Suppose the number of protons of one isobar matches with that of another they are called as mirror-nuclides of each other.

Examples of isobars are:



Since isobars are different elements they appear in different places in the periodic table.

#### Isotones

Isotones are elements having the same number of neutrons.  ${}^{36}\text{S}$ ,  ${}^{37}\text{Cl}$ ,  ${}^{38}\text{Ar}$ ,  ${}^{39}\text{K}$ , and  ${}^{40}\text{Ca}$  nuclei are all isotones of 20 because they all contain 20 neutrons.

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