

Modern Physics

Nucleons

Problem 1.- Indicate the number of protons, neutrons and electrons in each of the following atoms:

- a) ${}_{92}^{235}\text{U}$
- b) ${}_{7}^{13}\text{N}^{+}$
- c) ${}_{6}^{14}\text{C}^{+2}$
- d) ${}_{8}^{17}\text{O}^{-}$
- e) ${}_{17}^{37}\text{Cl}$
- f) ${}_{82}^{209}\text{Pb}$

Solution:

- | | |
|-------------------------------|--|
| a) ${}_{92}^{235}\text{U}$ | 92 protons, 92 electrons and $235 - 92 = 143$ neutrons |
| b) ${}_{7}^{13}\text{N}^{+}$ | 7 protons, 6 electrons and $13 - 7 = 6$ neutrons |
| c) ${}_{6}^{14}\text{C}^{+2}$ | 6 protons, 4 electrons and $14 - 6 = 8$ neutrons |
| d) ${}_{8}^{17}\text{O}^{-}$ | 8 protons, 9 electrons and $17 - 8 = 9$ neutrons |
| e) ${}_{17}^{37}\text{Cl}$ | 17 protons, 17 electrons and $37 - 17 = 20$ neutrons |
| f) ${}_{82}^{209}\text{Pb}$ | 82 protons, 82 electrons and $209 - 82 = 127$ neutrons |