

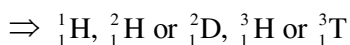
QUANTUM NUMBER

- The total number of isotopes of hydrogen and number of radioactive isotopes among them, respectively, are :
(1) 2 and 0 (2) 3 and 2
(3) 3 and 1 (4) 2 and 1
- The isotopes of hydrogen are :
(1) Tritium and protium only
(2) Deuterium and tritium only
(3) Protium and deuterium only
(4) Protium, deuterium and tritium
- The 71st electron of an element X with an atomic number of 71 enters into the orbital :
(1) 4f (2) 6p (3) 6s (4) 5d
- The quantum number of four electrons are given below -
I. $n = 4, l = 2, m_l = -2, m_s = -\frac{1}{2}$
II. $n = 3, l = 2, m_l = 1, m_s = +\frac{1}{2}$
III. $n = 4, l = 1, m_l = 0, m_s = +\frac{1}{2}$
IV. $n = 3, l = 1, m_l = 1, m_s = -\frac{1}{2}$
The correct order of their increasing energies will be -
(1) IV < III < II < I (2) IV < II < III < I
(3) I < II < III < IV (4) I < III < II < IV
- The isoelectronic set of ions is :
(1) N^{3-} , Li^+ , Mg^{2+} and O^{2-}
(2) Li^+ , Na^+ , O^{2-} and F^-
(3) F^- , Li^+ , Na^+ and Mg^{2+}
(4) N^{3-} , O^{2-} , F^- and Na^+

SOLUTION

1. **Ans. (3)**

Total number of isotopes of hydrogen is 3

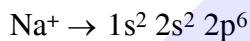
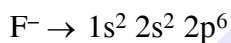
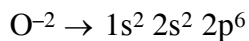
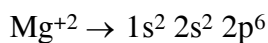
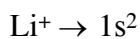
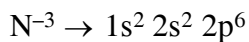
and only ${}^3_1\text{H}$ or ${}^3_1\text{T}$ is an Radioactive element.2. **Ans. (4)**

Isotopes of hydrogen is :

Protium Deuterium Tritium

3. **Ans. (1)**4. **Ans.(2)**According to $(n+l)$ rule : $3p < 3d < 4p < 4d$

Correct option : (2)

5. **Ans.(4)** N^{-3} , O^{-2} , F^- and Na^+ are isoelectronic