ATOMS AND NUCLEI

1. The radius of inner most orbit of hydrogen atom is $5.3\times10^{-11}m$ What is the radius of third allowed orbit of hydrogen atom? **[NEET (2023)]**
   (a) 1.06Å (b) 1.59Å
   (c) 4.77Å (d) 0.53 Å
2. A nucleus of mass number 189 splits into two nuclei having mass number 125 and 64. The ratio of radius of two daughter nuclei respectively is: **[NEET (2022)]**
   (a) 1 : 1 (b) 4 : 5
   (c) 5 : 4 (d) 25 : 16
3. A nucleus with mass number 240 breaks into two fragments each of mass number 120, the binding energy per nucleon of unfragmented nuclei is 7.6 MeV while that of fragments is 8.5 MeV. The total gain in the Binding Energy in the process is : **[NEET (2021)]**
   (a) 804 MeV (b) 216 MeV
   (c) 0.9 MeV (d) 9.4 MeV
4. The ratio of wavelengths of the last line of Balmer series and the last line of Lyman series is **[NEET (2017)]**
   (a) 4 (b) 0.5
   (c) 2 (d) 1
5. If an electron in a hydrogen atom jumps from the 3rd orbit to the 2nd orbit, it emits a photon of wavelength λ. When it jumps from the 4th orbit to the 3rd orbit, the corresponding wavelength of the photon will be **[NEET (2016-I)]**
   (a) $\frac{9}{16}\lambda$ (b) $\frac{20}{7}\lambda$
   (c) $\frac{20}{13}\lambda$ (d) $\frac{16}{25}\lambda$
6. Hydrogen atom in ground state is excited by a monochromatic radiation of $\lambda = 975$ Å. Number of spectral lines in the resulting spectrum emitted will be **[NEET (2014)]**
   (a) 6 (b) 10
   (c) 3 (d) 2
7. The Binding energy per nucleon of ${}^{7}_{3}Li$ and ${}^{4}_{2}He$ nuclei are 5.60 MeV and 7.06 MeV, respectively. In the nuclear reaction ${}^{7}_{3}Li+{}^{1}_{1}H\rightarrow{}^{4}_{2}He+{}^{4}_{2}He+Q$, the value of energy Q released is: **[NEET (2014)]**
   (a) 8.4 MeV (b) 17.3 MeV
   (c) 19.6 MeV (d) -2.4 MeV

Get More Learning Materials Here : CLICK HERE www.studentbro.in

ANSWER KEY

1. (c)

2. (d)

3. (b)

4. (a)

5. (b)

6. (a)

7. (b)

Get More Learning Materials Here : CLICK HERE www.studentbro.in