- Q.1In Bohr's model of hydrogen atom, the ratio of periods of revolution of an electron in n = 2 ton = 1 is
(A)1: 2(B)4: 1(C)8: 1(D)16: 1
- Q.2The product of angular speed and tangential speed of electron in nth orbit of hydrogen atom is:
(A)Directly proportional to n2
(C)Inversely proportional to n4(B)Directly proportional to n3
(D)Independent of n





Q.4 The ratio of the speed of the electron in the first Bohr's orbit of hydrogenatom and the speed of light is equal to (where **e**,**h** and **c** have their usual meaning)

(A) $\frac{e^2}{\pi h \epsilon 0 c}$ (B) $\frac{e^2}{2\pi h \epsilon 0 c}$ (C) $\frac{e^2}{h \epsilon 0 c}$ (D) $\frac{e^2}{2h \epsilon 0 c}$

Q.5 If the radius of the first orbit of hydrogen atom is 5.29×10^{-11} m, the radius of the second orbit will be

(A) 21.16×10^{-11} m (B) 15.87×10^{-11} m (C) 10.58×10^{-11} m (D) 2.64×10^{-11} m

- Q.6 The angular momentum of an electron in the hydrogen atom is 3h2π. Here h is Planck's constant. The kinetic energy of this electron is:
 (A)4.53eV (B)1.51 eV (C) 3.4 eV (D)6.8 eV
- **Q.7** The electron in a hydrogen atom makes a transition n_1 to n_2 where n_1 and n_2 are the principal quantum numbers of the two states. Assume the Bohr's model to be valid. The time period of the electron in the initial state is eight times that in the final state. The possible value of n_1 and n_2 are **(A)** $N_1 = 6$, $N_2 = 2$ **(B)** $N_1 = 8$, $N_2 = 2$ **(C)** $N_1 = 8$, $N_2 = 1$ **(D)** $N_1 = 6$, $N_2 = 3$ **Q.8** An electron Jumps from the first excited state to the ground state of the hydrogen atom. What will be

- Q.9The radius of first Bohr's orbit of hydrogen atom is 0.53 'A. Then the radius of first Bohr's orbit of
Masonic atom [negative meson has mass 207 times that of electron but same charge] is:

(A) 2.56×10^{-13} m(B) 1.06×10^{-13} m(C) 0.53×10^{-10} m(D) 7.0×10^{-12} m
- Q.10The total energy of the electron in the ground state of the hydrogen atom is -13. 6 eV. The kinetic
energy of an electron in the first excited state is?
(A) 3.4 eV(B) 6.8 eV(C) 13.6 eV(D) 1.7 eV

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
Sol.	(C)	(C)	(B)	(D)	(A)	(B)	(D)	(C)	(A)	(A)