

## XI Chemistry Worksheet

Time: 30 min

### Ch#2 : Structure of Atom-02

Full Marks: 20

#### Instructions:

1. All questions are compulsory.
2. Please give the explanation for the answer where applicable.

Q1 - Find the wavelength of radiation emitted when an electron from infinity falls to stationary state 1 in a hydrogen atom. ( $R_H = 1.09 \times 10^7 \text{ m}^{-1}$ )

(3 Marks)

Q2 - Explain Hund's rule with the help of example of nitrogen.

(3 Marks)

Q3 - Derive de Broglie's relationship. What is its significance?

(5 Marks)

Q4 - The frequency of a radiation is  $6 \times 10^{14}$  cycles / sec. Find out the wavelength of radiation in nanometer.

(2 Marks)

Q5 - An isotope of atomic mass 27 has 14 neutrons in the nucleus. What is the atomic number, name and symbol of element.

(2 Marks)

Q6 - Write the designation for orbitals with following quantum numbers-

- (a)  $n = 3, l = 1$       (b)  $n = 5, l = 2$

(2 Marks)

Q7 - Who discovered neutrons?

(1 Mark)

Q8 - Which element does not have any neutron in it?

(1 Mark)

Q9 - Give two examples from everyday life where cathode ray tubes are used?

(1 Mark)