

**Welland Gouldsmith School Patuli**  
**Class- XI**  
**Chemistry Worksheet**  
**Session – 2020-21**

**1.Fill in the blanks: -**

- a)The light radiations with discrete quantities of energies are called \_\_\_\_\_
- b) The minimum frequency needed to eject electrons from a particular metal \_\_\_\_\_.
- c)The energy absorbed or emitted by an electron during a transition is always \_\_\_\_\_
- d) The value of Rydberg constant is\_\_\_\_\_.

**2.State true or false: -**

- a)The frequency of a radiation is given by  $\nu = c \lambda$
- b)Atomic spectra contain well defined discrete lines.
- c)Electrons always behave as a wave.
- d)In an atom, angular velocity of electrons are quantised.

3.In an hydrogen atom, an electron jumps from the fourth orbit to the first orbit. Find out the frequency and wavelength of the spectral line.

4.The mass of an electron is  $9.1 \times 10^{-31}$  kg.  
If its K.E is  $4.25 \times 10^{-25}$  J. Calculate its wavelength.

5) Calculate the uncertainty in position of an electron where velocity is  $3 \times 10^4 \text{ cm s}^{-1}$  accurate upto 0.001%. Mass of an electron is  $9.1 \times 10^{-28} \text{ g}$ .

6) Calculate the ionization energy of  $\text{He}^+$  if that of hydrogen atom is 13.6 eV.

7) What is meant by quantization of energy? How is the quantization of energy helpful in explaining The spectrum of an atom?

8) Show that the circumference of the Bohr orbit for the hydrogen atom is an integral multiple of the de Broglie wavelength associated with the electron revolving around the orbit.

9) Calculate the wave number for the longest wavelength transition in the Balmer series of atomic hydrogen.

10) Calculate the wavelength of radio waves associated with frequency of  $1 \times 10^5 \text{ MHz}$ .