St. Crispin's Sr. Sec School
New Railway Road, Gurugram
Subject – Chemistry
Class – XI (Science)
Holiday Assignment

VERY SHORT ANSWER QUESTIONS

Q1. Why electrons present around the nucleus of an atom do not fall into the nucleus?
Q2. Name three ions which are isoelectronic with F^- ions.
Q3. How are frequency and wave number related to each other?
Q4. What happens when an electron hits a zinc sulphide screen and what does it prove?
Q5. Which orbital does not have directional characteristics?

SHORT ANSWER QUESTIONS

Q6. What is the number of photons of light with a wavelength of 4000pm that provide 1 J of energy?

Q7. Yellow light emitted from a sodium lamp has a wavelength of 580 nm. Calculate the frequency and wave number of the yellow light.

Q8 Derive de-Broglie equation for microscopic particles.

Q9. State Heisenberg's uncertainty principle.

Q10. Explain why it is impossible to measure simultaneously the position and velocity of a fast moving body like an electron.

Q11. Show that the circumference of the Bohr orbit for Hydrogen atom is an integral multiple of the de- Broglie wavelength associated with the electron moving around the orbit.

Q12. The longest wavelength doublet absorption transition is observed at 589 and 589.6 nm. Calculate the frequency of each transition and the energy difference between the two excited states.

Q13. What is atomic orbital? Briefly describe the shapes of s , p , and d orbitals.

Q14. Why do some atoms possess exceptional electronic configuration? Explain with suitable example.

Q15. How many sub shells are associated with n= 4?

Multiple choice Questions

Q16. The number of 2p electrons having spin quantum numbers s = ½ are

a) 6 b) 0 c) 2 d) 3

Q17. Which of the following has largest de- Broglie wavelength , provided all have equal velocity?

a) CO_2 molecule b) Electron c) Ammonia molecule d) Proton

Q18.The angular momentum of an electron is zero. In which orbital may it be present?

a) 2s b) 2p c) 3d d) 4f

Q19. When the electron of a hydrogen atom jumps from n=4 to n=1 state, the number of spectral lines emitted is

a) 15 b) 9 c) 6 d) 3

Q20. In photoelectric effect, the kinetic energy of the photoelectrons increases linearly with the:

a) Wavelength of incident light
b) Frequency of incident light
c) Velocity of incident light
d) Atomic mass of the element