

**Assignment 2020****Class: IX****Subject: Chemistry****Date-18.05.2020**

Shortly write the answers of the following questions: [Each answer will be regarded as one star(\*)]

1. Particles of which **state** of matter move with highest speed and why?
  2. How can we change solid iron into liquid?
  3. From amongst K, L, M and N shells, which is associated with lowest energy and which one is associated with highest energy and why?
  4. The chemical properties of an atom and the types of bonds it may make are primarily determined by \_\_\_\_\_.
  5. An element **A** has 6 electrons. Write the molecular formula of the compound formed by the element with hydrogen.
  6. What kind of structure is formed in solid potassium chloride?
  7. Show the distribution of electrons in oxygen atom using orbital arrangement.
  8. Chlorine exists in two isotopic forms, Cl-37 and Cl-35 but its relative atomic mass is 35.5. What are the percentages of Cl-37 and Cl-35 in nature?
  9. Why cannot we compress the solid block of steel?
  10. When does magnesium chloride conduct electricity?
  11. Mention dissimilarity among O, O<sub>2</sub> and O<sup>2-</sup>.
  12. How many electrons are being shared between the two nitrogen atoms in a nitrogen molecule?
  13. Why all isotopes of a given element show the same type of chemical behavior.
  14. The formula of calcium phosphate is Ca<sub>x</sub>(PO<sub>4</sub>)<sub>y</sub>. Which will be values of x and y?
  15. Mention the information about sub-atomic particles which gets from the formula <sup>24</sup><sub>12</sub>Mg<sup>2+</sup>
  16. If liquids have no definite shape then why they have a definite volume?
  17. The electronic configuration of valence shell of Cu is 3d<sup>10</sup>4s<sup>1</sup> and not 3d<sup>9</sup>4s<sup>2</sup>. How is this configuration explained?
  18. How would you separate the mixture of naphthalene powder and sand?
  19. Why it is important to know the boiling point of a liquid?
  20. What is the latent valency of carbon in CO?
21. Electrons in a given shell have approximately equal amount of energy. The energy value increases in successive shells outwards the nucleus. The arrangement of orbitals on the basis of energy is based upon their (n+l) value. Lower the value of (n+l), lower is the energy. For orbitals having same values of (n+l), the orbital with lower value of n will have lower energy.
- a) What is called electronic configuration? \*
  - b) Show why 3d orbital exist but 2d does not exist? \*\*
  - c) How the value of 'l' is used to specify different orbitals and maximum electron containing capacity of any orbital? Explain. \*\*\*
  - d) Explain, taking calcium as an example, how electrons are distributed in orbitals of atom using the stem mentioned rules. \*\*\*\*

22. The electronic configurations of two elements A, and B are [2, 8,2] and [2,8,7] respectively.

- What is ionic lattice?\*
- Why the compound formed between A and B is solid at room temperature?\*\*\*
- Explain the bond formation between element A and B using dot-cross diagram. \*\*\*\*
- The stable form of element B is represented by the formula in which another type of bond presents. Make a comparison between the mentioned two types of bonds. \*\*\*\*\*

23. Temperature is an important factor that affects the diffusion rate of liquids and gases. Some other factors can influence the rate of diffusion. Thomas Graham discovered Law of rate of gas diffusion which can be proved experimentally shown by the figure-2 below.



Figure-1

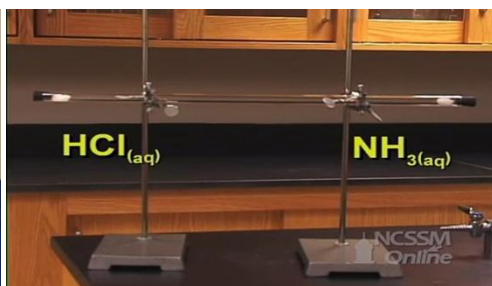


Figure-2

- What is meant by temperature of condensation?\*
- Why is diffusion slower through a solid compared to a liquid and gas? \*\*
- Explain how does the temperature affect the rate of diffusion on the basis of above experiment-1? \*\*\*
- Explain the experiment shown in figure-2 and analyze the observation and results of the experiment. \*\*\*\*\*