HALF YEARLY EXAMINATION
Mock Test -1
Chemistry
CLASS – XI
SET - A

Time: 3 hrs **Maximum Marks: 70**
Total No. of Questions: 30

Name: …… **Roll No: ……..**

GENERAL INSTRUCTIONS

1. All questions are compulsory
2. There is no overall choice.
3. Q. No. 1 to 8 are One Mark Questions; Q. 9 to 18 are Two Mark Questions; Q. 19 to 27 are Three Mark Questions; Q. 28 to 30 are Five Mark Questions.

SECTION – A

1. For an isolated system $\Delta U = 0$, then what will be the ΔS?
2. Which electrons take part in bond formation
3. Write down vander wall equation for one mole of real gas?
4. What is the difference between a quantum and a photon?
5. Arrange the following compounds in order of increasing ionic character in the molecules:

   LiF, K_2O, N_2, SO_2, and CIF_3.
6. Would you expect the second electron gain enthalpy of O as positive, more –ve or less –ve than the first. Justify your answer.
7. Calculate the enthalpy change for the process:

   $CCl_4(g) \rightarrow C(g) + 4Cl(g)$

   And Calculate bond Enthalpy of C-Cl in $CCl_4(g)$

   $\Delta vapH^{\circ}_{(CCl4)} = 30.5 \text{ KJ / mol}$

   $\Delta_f H^{\circ}_{(CCl4)} = -135 \text{ KJ / mol}$

   $\Delta_a H^{\circ}_{(c)} = 715.0 \text{ KJ / mol}$

   $\Delta_a H^{\circ}_{(CCl2)} = 242 \text{ KJ / mol.}$

8. Arrange the following:

(i) CaH_2, BeH_2 and TiH_2 in order of increasing electrical conductance?

(ii) H-H, D-D and F-F in order of increasing bond dissociation enthalpy.

(iii) NaH, MgH_2 and H_2O in order of increasing reducting property?

9. Give the lewis representation of:

(i) Nitric acid

(ii) Ammonia

(iii) Ozone molecule

10. How are 0.5 m of NaOH different from 0.5 M of NaOH?

11. Write the electrionic configuration of O_2.

12. What is the basic difference between electron gain enthalpy and electro negativity?

13. Under what condition of temperature and pressure do real gases tend to show ideal gas behavior?

14. Predict in which of the following entropy decreases / increases:

(i) A liquid crystallizes into a solid.

(ii) $H_2(g) \rightarrow 2H(g)$

15. What is the concentration of sugar ($C_{12}H_{11}O_{22}$) in mol L^{-1} if 20g of it is dissolved in enough water to make find volume up to 2L?

16. Calculate the mass of a photon with wavelength 3.6Aº. [h = 6.626×10^{-34} Js].

17. What is meant by 'Polar Covalent Bond'? Give suitable example.

OR

Different sigma [σ] and pi [π] bond.

18. State Hess's law of constant Heat Summation by giving an example.

19. Account for the following:

(i) KO_2 parameganetic.

(ii) LiI iodide is more soluble KI in ethanol.

20. (a) State Heisenberg's Uncertainity principle.

(b) Using s, p, d, f notations, describe the orbital with following quantum numbers:

(i) n = 2, l = 1

(ii) n = 4, l = 0

(iii) n = 5, l = 3

(iv) n – 3, l = 2

21. Predict the formula of the binary compound formed by the combination of the following pairs of elements:

(i) Magnesium and nitrogen.

(ii) Phosphorous and fluorine

(iii) Aluminum and iodine.

22. Define hybridization. State the hybridization and the shape of PCl_5 and BeF_2.

23 (a) Which type of intermolecular forces exist between KI and I_2.

(b) What will be the pressure of the gaseous mixture when 0.5 L of H_2 at 0.8 bar and 2.0 L of O_2 at 0.7 bar are introduced in a 1L vessal at 27º C?

24. (a) Compete and balance the following equation:

(i) $B_2H_6 + NH_3$[]

(ii) $Al + NaOH + N_2O$[]

(b) Give reasons:

(i) Graphite is used as lubricant.

(ii) Conc. NHO_3 can be transported in aluminum container.

(iii) Co is poisonous in nature.