**Sri Vinayaga Matric Hr. Sec. School – Pennagaram**

**Half Yearly Exam - 2018**

**Std : XIth Mark : 100**

**Sub : Chemistry Time : 2.30**

**PART - I**

1. **Choose the correct Answer:**  20 x 1 = 20
2. Which of the following contain same compound (s) has /have percentage of carbon same as that is ethylene C2H4
3. Propene b. Ethyne c. Benzene d. Ethane.
4. If n = 3 the correct sequence for filling of electrons will be \_\_\_\_.
5. ns →(n-2)f → (n – 1)d → np.
6. Ns →(n-1)d → (n – 2)f → np.
7. Ns →(n-2)f → np → (n – 1)d
8. one of these are correct.
9. Which of the following orders of Ionic radii is correct?
10. H- >H+>H b. Na+>F->O2- c. F>O2->Na+ d. None of these.
11. The hardness of water can be determined by volumetrically using the reagent
12. Sodium thio sulphate b. Potassium permanganate c. Hydrogen peroxide d. EDTA.
13. In which process fused sodium hydroxide electrolysed for extraction of sodium?
14. Castner’s process b. Cyanide process, c. Down process d. All of these.
15. The units of Vander Waals constants b and a respectively
16. Mol L-1 and L atm2mol-1 c. Mol L and L atm mol2
17. Mol -1 L and L2 and mol-2 d. None of these.
18. In an adiabatic expansion of an Ideal gas
19. H2N – CO – NH.NH2.HCL c. C6H5 – NH – NH2.HCL
20. NH2 – NH2.HCL d. C6H5CONH2.
21. In an adiabatic expansion of an Ideal gas.
22. W= -∆U b. W=∆U + ∆ H c. ∆U = O d. W = O
23. Hyper conjugation is also knows as
24. No bond resonance b. Baker – Nathan effect c. Both a and b.

d. None of these.

1. Which of the following compounds will not undergo friedal – crafts reaction easily?

a. Nitro benzene b. Toluene c. Cumene d. Xylene.

1. Cis – 2- butane and trams – 20 butene are

a. conformational Isomers b. Structural Isomers

c. Configurational Isomers d. Optical Isomers.

1. The compound that will react most readily with gaseous bromine

has the formula

a. C3H6 b. C2H2O c. C4H10 d. C2H4.

1. How many cyclic and acyclic Isomers are possible for the molecular formula C3H6O?

a. 4 b.5 c. 9 d. 10

1. A macroscopic particle of mass 100g and moving at a velocity of 100 cms-1 will have a de broglie wavelength of

a. 6.6 x 10-29cm b. 6.6 x 10-30cm c. 6.6 x 10-31cm d. 6.6 x 10 -32cm.

1. \_\_\_\_\_ is responsible for the transmission of nerve signals?

a. Li b. Na c. K d. Mg.

1. The parameters that describe the gaseous state are

a. Volume b. Pressure c. Temperature d. All of these.

1. For the reaction Pcl5(g) → Pcl3(g) + Cl2 (g).

a. ∆H > HU b. ∆H < ∆U c. ∆H = ∆U d. Un Predictable.

1. Ortho and para –nitro phenol can be separated by

a. azotrophic distillation b. Destructive distillation c. Steam

distillation d. Cannot be separated.

1. CH3 –CH2 – CH –CH2-CH2-CN the compound IUPAC name

CH3

a. 4-methyl hexane nitrile, b. 4-methyl hepta nitrile, c. 3 - methyl hepta nitrile, d. 3 – methyl hexa nitrile.

1. What is the hybridisation state of benzy carbonium Ion?

a. SP2  B. SPd2 c. SP3 d. SP2d.

**PART – II**

1. **Answer any nine questions and question number 29 is compulsory. 9** x 2 =1 8
2. Define equivalent mass?
3. State and Explain Pauli’s exclusion principle.
4. What is effective nuclear charge?
5. What are the hydrogen bonding?
6. Give the uses of gypsum?
7. What are liquid ammonia bottle is cooled before opening the seal?
8. Define enthalpy of combustion?
9. What are Homologous series?
10. Balance the Equation i) CH3 – Br + KOH → ii) CH3-O-CH3+HI →
11. Write in a IUPAC name? i)3, 3 Dimethyl pentane ii)2,3 Dimethyl pentane
12. The calculated oxidation state. a)H2O2 b)KO2, c)OF2 d)CH2F2.
13. Define the functional group?
14. Define for the wurtz reaction?
15. Draw Cl3 trans Isomers for the following compounds a) 2 – Chloro -2 – butane, b) CH3 – CCl = CH-CH2-CH3.

**PART – III**

1. **Answer any 9 questions and question number 38 is compulsory.**
2. Distinguish between oxidation and reduction?
3. Give the electronic configuration of mn2+ and Cr3+.
4. What are S – block elements?
5. Calculate the amount of water produced by the combustion of 32g of methane?
6. Explain the types of hydrogen bonding with an example?
7. How is plaster of paris prepared?
8. State Boyle’s law and Charles’s Law?
9. The equilibrium constant of a reaction is ,10, What will be the sign of ∆G? Will this reaction be spontaneous?
10. What are the chain (or) Nuclear (or) skeletal Isomerism?
11. 0.24g of an organic compound gave 0.287g silver chloride in the carius method calculate the percentage of chlorine in the compound.
12. What are the Electrophilic addition reaction?
13. Give the IUPAC names of the element having the following atomic numbers.

a) 102 b) 108 c) 111.

1. What are the Corey – House mechanism?
2. Define Friedel craft’s Alkylation? (methylation)

**PART – IV** 7 X 5 = 35

1. **Answer all the questions?**
2. i) Balance the following equations by oxidation number method.

a) K2Cr207 + KI + H2SO4 → K2SO4 + Cr2(SO4)3 +I2 +H2O.

b) Cu + HNO3 → Cu (No3)2 +NO2 + H2O. (3)

ii) What are the magnetic quantum number . (2) (or)

i)What is the de Broglie warelength in (cm) of a 160g cricket ball travelling at 140km hr-1. (3)

ii) Define modran periodic Law?

1. i)Complete the following chemical reaction. (3)

a) Kmno4 + H2O2 → b) CrCl3 + H2O → c) Cao + H2O →

ii)Explain what to meant by efflorescence. (2) (or)

i)Derive de-Broglie equvation? (5)

1. i)Derivation of critical constants from vander waals constant?(5)(or)

i) Derive measurement Bomb calorimeter? (5)

1. i)State Joule Thomson effect? (3)

ii) List the characteristics of Internal energy? (2) (or)

i)List the characteristics of Gibbs free energy? (5)

1. Give the structure for the following compound?

i)Butan-2, 2-diol ii) Octane 1,3diene

iii) 2-chloro-2-methyl propane, iv) 2- chloro but -3-ene.

V. 3-ethyle -2-methyl -1-pentene. (5) (or)

i)Hyper conjugation (3)

ii) Define Inductive effect (2)

1. i)Derive the conformation of n-Butane (5) (or)

ii)General methods of preparation of alkenes. (5)

1. i)An organic compound (A) C2H4 decolourises Bromine water. (A)on reaction with chlorine gives (B), A reacts with HBr to give (C) Identify,(A), (B) (C). Explain the reactions . (5) (or)

i)Suggest and Explain an Indirect to calculate Lattice enthalpy

of sodium chloride crystal?

***\*\*\*\*\* ALL THE BEST \*\*\*\*\*\****