



G.C.E. A/L Examination November - 2017

Conducted by Field Work Centre, Thondaimanaru

In Collaboration with

Provincial Department of Education Northern Province.

Chemistry – II

Grade :- 12 (2019)

Part- II

Essay Questions - B

❖ Answer two questions only.

01) a)

- i. How hydrogen bond is formed?
- ii. What are the anomalous characters occur in water because of hydrogen bond? Explain it.

b)

- i. Mention about the intermolecular interactions found among the molecules of CS_2 .
- ii. Which type of compounds dissolve well in CS_2 solvent?

c)

- i. NH_3 dissolves more in water than CCl_4 Explain.
- ii. I_2 dissolve more in CCl_4 than water Explain.

d) Relative molar mass of H_2S is greater than H_2O But Boiling point of H_2O is greater than H_2S Explain it.

02) a) Consider the molecules PCl_3 , SO_2 , PCl_5 , H_2O , $HClO_4$, ICl_3 , I_3^- , SCl_4 , SO_3
Give the molecule with following shapes .

- 1) Linear shape
- 2) See - saw shape
- 3) T shape
- 4) V shape
- 5) Tetrahedral shape
- 6) Trigonal planar.

b) Explain why the following properties increase is in the below mentioned order.

- 1) $MgCO_3 < CaCO_3 < SrCO_3 < BaCO_3$ [Thermal stability]
- 2) $Cl_2 < Na < Al < Si$ [Melting Point]
- 3) $Li < B < Be < C$ [Ionization enthalpy]
- 4) $Al^{3+} < Na^+ < Ne < N^{3-}$ [Ionic radius]

03) a) 3mol dm^{-3} and 0.5mol dm^{-3} HCl Stock solutions are provided for you. Explain How would you prepare 250cm^3 of 1mol dm^{-3} HCl solution. Using the above stock solutions given.

b) Calculate the volume of O_2 that can be obtained at standard temperature and pressure from 200g of H_2O_2 solution containing 10% of H_2O_2 by mass. [volume of 1mol of O_2 is 22.4dm^3 at STP condition and H_2O_2 decomposes as H_2O and O_2]

c) A solution of CaCl_2 is prepared by mixing 11g of CaCl_2 and 500ml of water [Density of water is 1g ml^{-1}] [$\text{Ca} = 40\text{g mol}^{-1}$, $\text{Cl} = 35.5\text{g mol}^{-1}$]

a) Calculate the molarity of CaCl_2 in the solution?

b) Calculate the concentration of Cl^- ions in ppm?

c) Calculate the mole fraction of CaCl_2 and water in the solution?