MPVM GANGAGURUKULAM
Holiday homework – Chemistry – class 12
Session – 2025 - 26

1. Prepare a model to show working of fuel cell. (Also prepare flow diagram).
2. Give the reaction takes place at cathode and anode in all types of cell.
3. Write the cell reaction for each type of cell - (charging and discharging reaction)
4. What are the advantages of fuel cell over other electrochemical cells?
5. Mention the different electrolytes used in different electrochemical cell.

6. Prepare a list of 5 soaps and detergents with their concentration terms written in labels and explain the concentration terms used.
7. Solve the questions – given below –
   a. Which colligative property is preferred for the molar mass determination of macromolecules?
   b. What is the Van't Hoff factor in $K_4 [Fe(CN)_6]$ and $BaCl_2$
   c. Determine the osmotic pressure of a solution prepared by dissolving 25 mg of K_2SO_4 in 2 litre of water at 25°C assuming that it is completely dissociated.
   d. An anti-freeze solution is prepared from 222.6 g of ethylene glycol $C_2H_4(OH)_2$ and 200 g of water. Calculate the molality of the solution. If the density of this solution be 1.072 g mL-1, what will be the molarity of the solution?
   e. Outer shells of two eggs are removed. One of the egg is placed in pure water and the other is placed in saturated solution of NaCl. What will be observed and why ?
   f. A solution prepared by dissolving 8.95 mg of a gene fragment in 35.0 ml of water has an osmotic pressure of 0.335 ton at 25°C. Assuming the gene fragment is a non-electrolyse, determine the molar mass.