

**ANURAG GROUP OF INSTITUTIONS**  
**(Autonomous)**  
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**ASSIGNMENT TEST-1 FOR I. B.Tech II semester (2017-18)**

**ENGINEERING CHEMISTRY**

**(COMMON TO ECE & EEE)**

1. Explain the hardness of water and its estimation by EDTA method. (L2)(CO1)
2. (a) 40 ml of a sample water consumed 10 ml of 0.01M EDTA before boiling and 5mL of the same EDTA after boiling. Calculate the temporary and permanent hardness. (L4)(CO1)  
  
(b) Define disinfection of drinking water. (L1)(CO1)
3. Explain the method of softening of water by Zeolite process? (L2)(CO1)
4. (a) Explain the Reverse Osmosis method. (L2)(CO1)  
(b) Discuss Scale & Sludge? (L2)(CO1)
5. Define following. (L1)(CO2)
  - i) Specific conductance
  - ii) Molar conductance
  - iii) Equivalent conductance.
  - iv) Electrode potential
  - v) EMF of a cell
6. State half cell and net cell reactions for the following cell  
$$\text{Zn}/\text{Zn}^{+2}_{(0.5\text{M})} // \text{Cu}^{+2}_{(0.75\text{M})}/\text{Cu}$$

Solve the EMF of the above cell, given that  $E^{\circ}_{\text{Zn}^{+2}/\text{Zn}} = -0.763 \text{ V}$  and  $E^{\circ}_{\text{Cu}^{+2}/\text{Cu}} = 0.34 \text{ V}$  (L1&L3) (CO2)