

**VIT**Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act 1956)**School of Advanced Science
Continuous Assessment Test – I
Winter Semester 2019-20****Course Name & Code:** Engineering Chemistry & CHY1701
Slot: A2+TA2**Duration:** 90 min**Max. Marks:** 50**Faculty Name & Class Nbr.:** Dr. Amit Ranjan Maity (2833), Dr. Sasikumar S (2844),
Dr. Arup Sinha (2856), Dr. Padala Kishor (3250), Dr. Tamas Kumar Panda (3640),
Dr. Ravikanth K (3643), Dr. Sovan Roy (4037), Dr. Nawa Khan F (6906)

S. No.	Answer All the Questions (10 x 5 = 50 Marks)	CO
1.	Why does hard water not form lather with soap solutions? Differentiate temporary and permanent hardness?	1
2.	Illustrate the principle process involved to determine the hardness of water by EDTA method?	1
3.	0.28 g of CaCO_3 was dissolved in dil. HCl and the solution was made up to one liter with distilled water. 100 mL of the above solution required 28 mL of EDTA solution on titration. 100 mL of the hard water sample required 35 mL of the same EDTA solution on titration. After boiling 100 mL of hard water, cooling, filtering and then titration required 10 mL of EDTA solution. Calculate all the types of hardness of the water.	1
4.	Discuss the principle for determining dissolved oxygen in water.	1
5.	How does sludge differ from scales? Discuss any one conditioning methods to prevent scale formation.	1
6.	Distinguish hot and cold lime soda processes of softening hard water.	1
7.	Discuss the softening of hard water by ion-exchange process.	1
8.	Explain break point chlorination with a suitable graphical representation. Give its significance.	1
9.	Why reverse osmosis method of purification of water is known as super filtration? List out the advantages of this method and give examples of membranes used in reverse osmosis.	1
10.	Discuss electrodialysis method for desalination of sea water. Discuss in detail with diagram.	1



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