VIT

Vellore Institute of Technology

School of Advanced Science
Continuous Assessment Test – I
Winter Semester 2019-20

Course Name & Code: Engineering Chemistry & CHY1701 **Duration:** 90 min

Class Number: 2826, 2839, 2849, 2869, 3635, 3221, 3639, 4036 **Max. Marks:** 50

Faculty Name: Dr. Tamas K Panda, Dr. Amit R Maity, Dr. Buvaneswari G, Dr. Mohana Roopan S, Dr. Tapas Ghatak, Manju S L, Dr. Madhumitha G, Dr. P Paira **Slot:** A1+TA1

S. No.	Answer All the Questions (10 x 5 = 50 Marks)	CO
1.	How the dissolved oxygen in the water can be determined by volumetric analysis?	1
2.	Explain the candle filtration process for water treatment.	1
3.	A 50 ml of hard water sample required 28 ml of EDTA solution. However, the same water sample of 50 mL volume after boiling consumed only 5 ml of EDTA solution. In the case of a 50 ml of standard hard water (containing 15 g $CaCO_3$ per litre) required 55 mL EDTA solution. Calculate the different types of hardness of water and the express their values in terms of mg/L.	1
4.	Explain the causes of priming and foaming and also state the various methods adopted to avoid them.	1
5.	Give the reasons for the boiler corrosion and explain any two with appropriate equations.	1
6.	Explain the lime-soda process, with appropriate chemical reactions, for the softening of hard water.	1
7.	Explain the permutit process for the softening of hard water, and also state the regeneration process, with necessary diagram.	1
8.	Briefly describe both the ion-exchange and regeneration process involved with ion-exchange resin. Explain why the hard water has to be passed first through the cation resin column and then through anion resin column.	1
9.	Explain how the suspended impurities are removed from portable water and explain filtration in municipal water treatment processes.	1
10.	Explain the various methods of disinfection involved in the treatment of drinking water.	1

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