

**TERNA ENGINEERING COLLEGE, NERUL**

**UNIT TEST-I (CHEMISTRY)**

**Date: 3/9/15, Time: 1h (Division: A-H: Set 2)**

Note: (1) Atomic Weights: Ca=40, Na= 23, Mg=24, Cl=35.5, C=12, H=1, O=16, N=14, S=32,  
Al=27, K=39

**TOTAL MARKS= 15**

1. Solve any Five (2 marks each)

- What is hard & soft water and differentiate between alkaline and non-alkaline hardness.
- Write any three differences between BOD and COD
- Write the principle of Reverse Osmosis.
- Write a short note on disinfection of water using ozone.
- Write the principle of Ion-Exchange process.
- Calculate the hardness in the water sample if 20ml of hard water having 0.2mg/ml hardness require 40 ml of EDTA and 50 ml of the water sample require 60ml of EDTA.

2. (a) Explain activated sludge method used for the treatment of waste water. (5 marks each)

OR

(b) Calculate the amount of lime (70%) and soda (85%) required to soften 1 lac litres of the given water sample which contains

Ca(HCO<sub>3</sub>)<sub>2</sub> = 8.1 mg/lit, HCl = 14.6 mg/lit, MgCO<sub>3</sub> = 8.4 mg/lit, CaCl<sub>2</sub> = 11.1 mg/lit,  
MgCl<sub>2</sub> = 19.0 mg/lit, Mg(HCO<sub>3</sub>)<sub>2</sub> = 7.3 mg/lit

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