

Code: 9ABS103

B.Tech II Year I Semester (R09) Supplementary Examinations December 2015

**ENGINEERING CHEMISTRY**  
(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) Show the structures of EDTA and its metal complex.  
(b) Write the detailed calculation part in the determination of hardness of water by EDTA method.
- 2 (a) Differentiate between Cathodic and Anodic protection.  
(b) Write a note on Inhibitors.
- 3 Explain the compounding and following fabrication technique.  
(a) Extrusion moulding.  
(b) Transfer moulding
- 4 (a) What is friction and explain the types of friction.  
(b) What is the role of lubricant in machineries?
- 5 (a) Define the cell constant of a conductivity cell? Explain how it is measured.  
(b) The resistance of N/2 solution of an electrolyte in a cell was found to be 50 ohm. Calculate the equivalent conductance of the solution, if the electrode in cell are 2.2 cm apart and with an area of 3.8 Sq cm.
- 6 How many phases, degrees of freedom and components are present in the following systems:  
(a) A gas in equilibrium with its solution in a liquid.  
(b) A solution of a solid in a liquid in equilibrium with solvent vapour.  
(c) Two partially miscible liquids in the absence of vapour.
- 7 (a) What is meant by sweetening of petrol? Explain.  
(b) The coal has the following analysis: C = 54.0%, H = 6.5%, O = 3.0%, N = 1.8%, moisture = 17.3% and remaining is ash. This coal on combustion with excess of air, gave 21.5 kg of dry flue gases per kg of coal burnt. Calculate the percentage of excess air used for combustion.
- 8 (a) Define soundness of cement. What is its significance?  
(b) Write elaborative note on properties of cement.

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