

Code No: 51005

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year Examinations, September/October – 2021

ENGINEERING CHEMISTRY

(Common to CE, EEE, ME, ECE, CSE, IT, AE, MIE)

Time: 3 Hours

Max. Marks: 75

Answer any five questions

All questions carry equal marks

- 1.a) Define and give expression for specific, molar and equivalent conductances. How are these related?
b) What are primary and secondary batteries? Give examples. How do you construct Ni- Cd cell? [7+8]
- 2.a) Rusting of iron is an example of electrochemical corrosion. Illustrate with an example.
b) Write an account on cathodic protection methods. [8+7]
- 3.a) What are the monomers for PVC, TEFLON, Bakelite. Write about preparation, Properties and engineering applications of thiokol rubber.
b) Differentiate addition and condensation polymerisation. [8+7]
- 4.a) What is hardness of water? How is it estimated by complexometry?
b) Describe Zeolite process of water softening. [8+7]
- 5.a) Write any two methods for the synthesis of nano materials.
b) How to calculate surface area of solid using BET adsorption isotherm. [7+8]
- 6.a) Give in detail about proximate analysis. Write the significance of each constituent.
b) How petrol is synthesized by Fischer- Tropsch's process? [8+7]
- 7.a) Define the terms: i) phase ii) Component and iii) Degrees of freedom. Draw phase diagram of water system.
b) Write an account on hardening and annealing. [9+6]
- 8.a) What are the characteristics of a good lubricant? Write the mechanism of thick film lubrication.
b) What are thermal insulators? Give their characteristics and applications. [8+7]

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