NMAM INSTITUTE OF TECHNOLOGY, NITTE (Section: A-E)

(An Autonomous College under VTU, Belgaum)

me: 1 Hour

II Sem B.E. (Credit System) Mid Semester Examinations – II April 2009

CY110 – ENGINEERING CHEMISTRY

Marks:30

Note: Answer any ONE question from each Part.

Part-I

a) Give the construction and working of H_2-O_2 fuel cell. (5)

b) Write notes on (i) Sacrificial anode (ii) Pitting corrosion (5)

c) What is metal finishing? Mention the technological importance of metal finishing. (5)

a) Indicate the advantages of fuel cells. Explain the construction and working of CH_3OH-O_2 fuel cell

b) Explain the effect of the following factors on the rate of corrosion
(i) Nature of corrosion product (ii) Humidity.

c) Explain the anodizing of aluminium.

Part- II

a) Explain the method of determination of alkalinity by indicators method. (6)

desalination? Discuss the purification of water by reverse osmosis process. (5)

effluent sample when 25 cm^3 of the effluent requires 10.5 cm^3 of 0.005 M $K_2Cr_2O_7$ for complete oxidation. (4)

n the method of determining sulphate content in water by gravimetric method. (5)

Describe the hot-lime soda process for softening of hard water. (7)

20 cm^3 of a sample of COD analysis was reacted with 10 cm^3 of 0.25 N $K_2Cr_2O_7$ required 6.5 cm^3 of 0.10 N FAS solution. 10 cm^3 of same $K_2Cr_2O_7$ and 20 cm^3 of distilled water under the same condition as the sample requires 26.0 cm^3 of 0.10 N FAS.

What is the COD of the sample? (3