



Register Number:

B.E / B.TECH DEGREE EXAMINATIONS: DEC 2014

(Regulation 2009)

First Semester

CHY101: ENGINEERING CHEMISTRY

(Common to All Branches)

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

- The electrode potential is the tendency of a metal
 - to gain electrons
 - either to gain or lose electrons
 - decomposition of ions
 - to lose electrons
- Electrode potential of saturated calomel electrode is
 - 2.422 V
 - 0.2422 mV
 - 0.2422 V
 - 0.3010 mV
- The voltage of the lead acid storage cell is
 - 2.0 MV
 - 2.0 V
 - 2.0 μ V
 - 3.0 V
- For a chain reaction to occur a definite quantity of fissionable material is essential. This is known as
 - Critical mass
 - Critical ratio
 - n/p ratio
 - p /n ratio
- For an adiabatic process
 - T=constant
 - q=0
 - q=constant
 - w=0

PART C (5 x 14 = 70 Marks)

21. a) Derive the Nernst equation for single electrode potential and give its applications

(OR)

- b) Explain the conductometric titrations of
(i) HCl Vs NaOH. (ii) CH₃COOH Vs NaOH (iii) BaCl₂ Vs Na₂SO₄

22. a) i) Write in detail about the lead acid battery. (7)
ii) What are fuel cells? Explain H₂ – O₂ fuel cell (7)

(OR)

- b) Explain the light water nuclear power plant with suitable diagram

23. a) Explain the Gibbs Helmholtz equation with its applications

(OR)

- b) Derive VantHoff isotherm equation and give its applications

24. a) Derive Langmuir adsorption isotherm with postulates. Give its limitations.

(OR)

- b) i) Discuss the ion exchange adsorption (7)
ii) Explain the application adsorption in catalytic reaction (7)

25. a) Explain the principle and working of ultraviolet spectrometer, with block diagram.

(OR)

- b) What is flame photometry? Give the theory, procedure and applications of flame photometry
