

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)  
B. Tech. Sem - I Electrical & Computer Engineering : WINTER- 2022  
SUBJECT : ELECTRO-CHEMISTRY

Day : Wednesday

Time : 10:00 AM-01:00 PM

Date : 11/1/2023

W-25144-2022

Max. Marks : 60

**N.B :**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable **CALCULATOR** is allowed.
- 4) Draw neat and labeled diagram **WHEREVER** necessary.
- 5) Assume suitable data if necessary.

**Q.1 a)** Discuss about construction and working of discharging and charging process related to Lead Acid storage battery with neat labeled diagram. [10]  
Give applications of Lead Acid Storage battery.

**OR**

**Q.1** Discuss about construction and working of discharging and charging process related to Alkaline storage battery with neat labeled diagram. [10]  
Give applications of Alkaline Storage battery.

**Q.2 a)** Define Fuel Cell. Give its types with examples. [04]  
**b)** Discuss about construction and working of discharging process related to Phosphoric Acid Fuel Cell with neat labeled diagram. [06]

**OR**

**Q.2** Discuss about construction and working of discharging process related to Flywheel energy storage system with neat labeled diagram. [10]  
Give two applications of Flywheel energy storage system.

**Q.3 a)** Write note on: [10]  
i) Nanotechnology applications-Energy Sector.  
ii) Self-assembling materials

**OR**

**Q.3** Explain Plasma spraying synthesis and Sol-Gel Process. [10]

**Q.4** Write note on Material of construction related to Chemical process industries. [10]

**OR**

**Q.4** Define Chemical process industries. [10]  
Explain classification of chemical industries on the basis of materials used or produced.

**Q.5 a)** Write note on special paints and Enamels. [05]  
**b)** Write note on Hot dipping. [05]

**OR**

**Q.5** Write note on Electroplating and Electroless plating. [10]

**Q.6 a)** Define Green Chemistry. Give four principles of Green chemistry. [05]  
**b)** Write note on Goals of Green Chemistry. [05]

**OR**

**Q.6 a)** Write note on Industrial applications of Green Chemistry. [05]  
**b)** Discuss synthesis methods by using Green pathway for Adipic acid. [05]