

- ii) The products produced in MeOH-O₂ fuel cell
 A) CO₂ + H₂O B) CO + H₂O C) CO₂ + N₂ D) None of these
- iii) Which of the following is a classical battery
 A) Ni - Cd B) Li - MnO₂ C) Zn - air D) Ni - MH
- iv) Li metal is used in Li - MnO₂ battery because it is
 A) Light B) Hard C) Heavy D) Non - Corrosive
- b. Explain the following battery characteristics :
 i) Cycle life ii) Shelf life iii) Energy density. (06 Marks)
- c. Explain the construction of Pb - acid battery. Give the reactions during discharge and recharge. (06 Marks)
- d. What are fuel cells? Explain the construction and working of H₂ - O₂ fuel cell. (04 Marks)
- 4 a. Choose the correct answer : (04 Marks)
- i) When a metal is corroded
 A) Metal is converted into its compound. B) Metal compound is converted into metal
 C) Brightness of the metal increases D) Hardness of the metal decreases.
- ii) Which of the following metal gives sacrificial protection to iron against corrosion
 A) Sn B) Ca C) K D) Zn
- iii) Corrosion process involves reaction of metal with
 A) O₂ B) H₂O C) O₂ and H₂O D) None of these
- iv) If nuts and bolts are made up of different match, the corrosion is due to
 A) differential aeration B) differential metal
 C) caustic embrittlement D) None of these
- b. Define corrosion of a metal. Explain electrochemical theory of corrosion taking iron as an example. (06 Marks)
- c. Explain the effect of the following factors on the rate of corrosion of a metal :
 i) Temperature ii) Relative areas of anode and cathode iii) P^H. (06 Marks)
- d. Explain water - line corrosion with an example. (04 Marks)

PART - B

- 5 a. Choose the correct answer : (04 Marks)
- i) Use of HCHO in electroless plating of Cu is to
 A) Oxidation Cu B) Reduction of copper ions
 C) Conversion of Cu⁺⁺ into Cu D) Both B and C
- ii) Use of levelers in electro plating is to
 A) increase the thickness of coating B) decrease the thickness of coating
 C) to make the deposit brighter D) achieve uniform thickness of coating.
- iii) To coat an irregular article uniformly, the bath used is
 A) Acid bath B) Alkaline bath
 C) Neutral bath D) of good throwing power
- iv) During electro plating of an article, current density employed is
 A) High B) Low C) Optimum D) None of these
- b. What is electroless plating? Mention any two advantages of electroless coating. (04 Marks)
- c. Discuss electroless plating of Copper. (08 Marks)
- d. Write a note on decomposition potential. (04 Marks)
- 6 a. Choose the correct answer : (04 Marks)
- i) During titration of HCl against NaOH conductance decreases initially because
 A) HCl is a strong acid B) NaOH is a strong base
 C) Highly mobile H⁺ ions are replaced by less mobile Na⁺ ions
 D) Reaction takes place slowly.

