

- i) What is the cell reaction occurring in Weston standard cell?
- j) What is the significance of molar extinction co-efficient?

SECTION-B

- 2. Discuss in details different methods for softening of water.
- 3. Discuss in details atmospheric, soil and dry corrosion with involved chemical equations.
- 4. Describe the instrumentation of HPLC & flow diagram of LC instruments.
- 5. Define redox indicators. What would be the pH of a 0.1M sodium acetate solution when the dissociation constant for acetic acid is 1.8×10^{-5} ?

SECTION-C

- 6. Write a detailed note on the fate of photochemically excited molecule.
- 7. What are overtones? Discuss Franck-Condon principle on details.
- 8. Give the number of lines in ESR spectrum of p-benzoquinone radical anion. Discuss NOE and spin lattice relaxation in NMR.
- 9. Lead (m.p. 327°C) and Silver (m.p. 961°C) form eutectic mixture at 303°C with 2.6% by weight of silver. Sketch and explain the type of cooling curve expected for 80% by weight of silver, and for 2.6% by weight of silver.