Unit – 2 –ELECTROCHEMICAL POWER SOURCES

PART-A

1. Explain the working principle of a primary (non-rechargeable) battery.
2. Compare the advantages and disadvantages of primary and secondary (rechargeable) batteries.
3. Describe the construction and working of a lead-acid battery.
4. What is the significance of the electrode potential in determining the performance of a battery?
5. Discuss the environmental impact of different types of batteries.
6. Explain the concept of battery life and factors affecting it.
7. Define specific energy and specific power of a battery. How are these parameters important in battery selection?
8. Compare the construction and working of a lithium-ion battery and a nickel-metal hydride (NiMH) battery.
9. Discuss the future trends in electrochemical power sources and their potential impact.

PART B

1. Classify the types of Batteries with examples and explain in detail about the construction and working of a Primary battery and mention its few advantages and applications
2. What type of cell is lead-acid battery? Construct a Lead acid battery with Neat and labelled diagram, explain it working with discharging and charging chemical reactions and Mention its few applications
3. Illustrate the construction and working of Zinc-Air battery with a neat diagram
4. Discuss about the construction and working of battery used in laptops and Mobile phones.
5. With a neat diagram discuss the construction and working of Super capacitors
6. Explain how Hydrogen can be separated from water and used as fuel.
7. Explain the construction and working of fuell cell used for spacecraft applications.