

**Probable Questions for ADT I**

**Hydropower**

1. Explain the working principle of hydropower with schematic diagram.  
How hydropower has been categorized in Nepal?
2. How do you classify the water turbines? Differentiate between impulse and reaction turbines.

**Solar Energy**

1. Write short notes on:
  - a. Solar Constant
  - b. Insolation
  - c. Irradiance
  - d. Air Mass
  - e. Peak Sun
2. Define beam, diffused and global radiation and show the relation between them.
3. Describe the working principle of Solar Cell (PV) technology and its application.
4. Draw the IV and PV curve for a solar PV cell and define the following terms:
  - a. Open circuit Voltage ( $V_{oc}$ )
  - b. Short circuit Current ( $I_{sc}$ )
  - c. Voltage at Maximum Power ( $V_{mp}$ )
  - d. Current at Maximum Power ( $I_{mp}$ )