

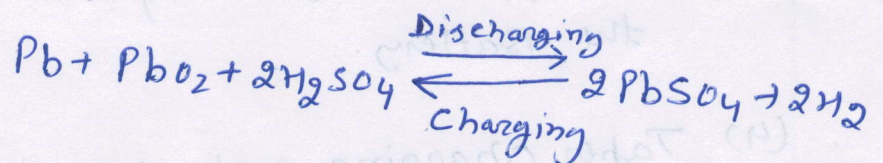
Question-① Describe the Importance of maintenance.

Answer- Maintenance can be define as a combination of actions carried out to replace, repair, service the components. The importance of maintenance can be given as follows.

- (1) Due to lack of maintenance any machine or equipment may breakdown, this results in losses and man power.
- (2) If machine is poorly maintained it will reduce the efficiency, production and life of the machine.
- (3) If maintenance of machines is properly organised it will reduce the faults, danger of breakdown.
- (4) Maintenance of machine detect the trouble at the early stage and helps to correct the section.
- (5) maintenance ensures that the production plant is available for use at minimum cost for scheduled hours.

Question-② Explain the methods of charging of Lead-Acid Battery.

Answer The charging process of a battery is given by the chemical reaction



Lead Acid Battery can be charged according to one of the following methods.

(1) Constant voltage charging method :- Constant voltage charging method is the most common method of charging Battery. In this method initially charging current is high which gradually decreased as the voltage of the Battery increased. In this method, the battery is charged from D.C. source. The applied voltage should be more than the e.m.f. of the battery.

(2) Constant current charging method :- Constant current charging method is usually adopted for initial charging of the Battery. In this method the input current to the Battery is adjusted to a value as recommended by its manufacturer. In this method the charging current supplied to the battery which is kept constant throughout the charging process by the fine control.

(3) Trickle charging method :- When storage battery is kept entirely for emergency purpose, it should be found fully charged and ready for service. The continuous charging is regulated for a small charging current is maintained during the period. The value of charging current for trickle charging is approximately 2% of the full charging current of the Battery.

(4) Taper charging method :- Taper charging method is used only when identical batteries are used. This is a charging from crude unregulated constant voltage source.

The current diminishes as the cell voltage builds up.

(5) Two rates charging method :- In this method starting current for charging is set at higher value. After certain time, current is changed to a lower value. Two values of currents are selected 20A and 5A for first four hours and next four hours. Voltage is charged in two steps, initial step is 2.4V per cell and final value is 2.2V per cell.