MOTHER TERESA
INSTITUTE OF SCIENCE AND TECHNOLOGY
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ACCREDITED BY NAAC
B - GRADE

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR: 2019-20

A SUMMARY REPORT

Course Name: HYDRAULICS AND HYDRAULIC MACHINERY

Name of the Resource Person: Mr.CH.Sridhar AEE/RWS Dept/Sathupally Sub Division.

Gap Identified: Estimation of water table beneath the ground Miscellaneous hydraulic machines

No. of Students attended: 45members

Summary: On the first day of the session (i.e 21-01-2020) Mr.CH.Sridhar AEE/RWS Dept/Sathupally Sub Division, delivered a lecture on the basics of Introduction to the course of the most reliable method of obtaining the depth to the water table at any given time is to measure the water level in a shallow well with a tape. If no wells are available, surface geophysical methods can sometimes be used, depending on surface accessibility for placing electric or acoustic probes. The depth to the water table can change (rise or fall) depending on the time of year. During the late winter and spring when accumulated snow starts to melt and spring rainfall is plentiful, water on the surface infiltrates into the ground and the water table rises. When water-loving plants start to grow again in the spring and precipitation gives way to hot, dry summers, the water table falls because of evapotranspiration.

The most reliable method of obtaining the depth to the water table at any given time is to measure the water level in a shallow well with a tape. If no wells are available, surface geophysical methods can sometimes be used, depending on surface accessibility for placing electric or acoustic probes.

Databases containing depth-to-water measurements can also be helpful, though they don't always have current data:

- The USGS National Water Information System (NWIS) has depth-to-water measurements made in the present and the past. A convenient way to find data for your area is by using the NWIS Mapper and selecting "Groundwater Sites" in the menu on the left. Click on any red groundwater pin to access the data (need to zoom in to change the dots to pins).
- The National Groundwater Monitoring Network is a compilation of groundwater monitoring wells from federal, state, and local groundwater networks across the nation. Use their Data Portal to zoom in to your area of interest and click on any site.

- Your state government probably maintains a database of drillers' logs that have water levels recorded when a well was drilled, and hydrologic consultants often have reports that contain water level data from shallow boreholes.

Consulting any or all of these sources is a good first step in finding out the depth to the water table.

- Aquifers and Groundwater
- Ground Water and the Rural Homeowner

In the afternoon session, he explained the practical exposure of miscellaneous hydraulic machines descriptionInformation about different hydraulic machines like hydraulic press, hydraulic ram, hydraulic accumulator, hydraulic intensifier, hydraulic crane and hydraulic lift.

The following are the miscellaneous hydraulic machines:

(a) Hydraulic press. It is a device used to lift larger load by the application of a comparatively much smaller force. It is based on Pascal's law.
(b) Hydraulic ram. It is a device used to lift small quantity of water to a greater height when a large quantity of water is available at a smaller height. It works on the principle of water hammer.
(c) Hydraulic accumulator. It is a device used to store pressure energy which may be supplied to hydraulic machines such as presses, lifts and cranes.
(d) Hydraulic intensifier. It is device used to increase the intensity of pressure of water by means of energy available from a large quantity of water at a low pressure.
(e) Hydraulic crane. It is a device used to lift heavy loads. It is widely used in docks for loading and unloading ships, ware houses, foundry workshops and heavy industries.
(f) Hydraulic lift. It is a device used for carrying persons and loads from one floor to another, in a multistory building.