

The quantity of water trapped in the depression is known as depression storage.

INFILTRATION:

Infiltration:- Defines the flow of water from ground surface, in the direction of ground water table through interconnecting voids of soil.

— I — f_p

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Infiltration capacity:- Infiltration rate is defined as the depth of infiltrated water in a given time.

The maximum rate at which water can infiltrate into the ground or the max. rate at which soil can absorb the water is defined as infiltration capacity.

The infiltration rate is designated by " f " and infiltration capacity is designated by " f_p ".

~~f_p~~ f_p

Unit — c.m/hr.

If intensity of rainfall is capacity " I " c.m/hr. and infiltration rate " f " c.m/hr.

(i) if $I = f_p$ → All of the rainfall ^{will} infiltrate into the ground with maximum rate i.e. f_p .

(ii) if $I < f_p$ → All of the rainfall will infiltrate into the ground with a rate equal to intensity of rainfall.

remaining portion will

intensity $\frac{\text{water depth}}{\text{time}}$

Factor affecting the infiltration rate :-

- 1) Rainfall Intensity.
- 2) Porosity of Soil (density).
- 3) Slope of the ground.
- 4) Vegetation cover on the ground.
- 5) Soil Temperature :- Increase temp. increase will be infiltration.

Measurement of Infiltration :-

- Infiltrometer.
- field experiment { Rainfall Simulator }
- Empirical formulae { Horton's equation }
- ~~→ Analytical Method { Hyetograph Analysis }~~

1. INFILTROMETER :-

- Simple tube type
- Double ring type

(a) Simple tube type Infiltrometer :- This is a simple instrument consisting

It is adopted by J.M.D it is generally used in India. It is designed to overcome principal objection involve in simple tube infiltrometer. In the two circular ring of dia. 30 cm, and 60 cm having length of 25 cm are driven into the ground to a depth of 15 cm.

Calculations are same as that for previous. The only difference is that outer ring is excluding in the calculation of infiltration.

Disadvantages of infiltrometers

- 1) Rain drop compaction effect is not considered.
- 2) The driving of infiltrometer by hammering change the physical and ~~str~~ structural properties of soil molecules.
- 3) The variation of rain fall intensity is not considered.
- 4) The result of the infiltrometer depends to some extent on their size. The large infiltrometers have small infiltration and vice versa.
- 5) The effect of presence of vegetal roots is also not considered in the infiltrometers.

Rain fall Simulators :- [Field Experiment]

It is the field method it gives the superior ^{result} but involve deep research & study.