Surface Detention- That part of the rain which remains on the ground surface during rain and either runs off or infiltrates after the rain ends.

Peak Flow: The maximum flow of a stream in response to a rainstorm event.

Evapotranspiration is the combined processes by which water moves from the earth's surface into the atmosphere. It covers both water evaporation and transpiration.

Evaporation is a type of vaporization that occurs on the surface of a liquid as it changes into the gas phase.

Transpiration is the process of water movement through a plant and its evaporation from aerial parts, such as leaves, stems and flowers.

groundwater flow is defined as the "part of streamflow that has infiltrated the ground, entered the phreatic zone, and has been (or is at a particular time) discharged

into a stream channel or springs; and seepage water."

Streamflow, or channel runoff, is the flow of water in streams and other channels, and is a major element of the water cycle.

Infiltration is the process by which water on the ground surface enters the soil.

Overland flow is the movement of water over the land, downslope toward a surface water body.

Subsurface flow refers to the flow of water below earth's surface as part of the hydrologic cycle.

groundwater recharge occurs as precipitation falls on the land surface, infiltrates into soils, and moves through pore spaces down to the water table.

aeration -Aeration (also called aerification) is the process by which air is circulated through, mixed with or dissolved in a liquid or substance.

Percolation can be defined as the flow of fluids through a porous media (filter).

Infiltration rate may be defined as the meters per unit time of the entry of water into the soil surface regardless of the types or values of forces or gradients. Water entry into the soil is caused by matric and gravitational forces.

A drainage basin is an area of land where water from rain or snow melt drains downhill into a body of water such as a river, lake, wetland or ocean. The drainage basin includes both the streams and rivers that convey the water as well as the land surface from which water drains into those channels.

Compactness coefficient is defined as the ratio of the watershed perimeter to the circumference of equivalent circular area.

Infiltration is the downward entry of water into the soil. The velocity at which water enters the soil is infiltration rate. Infiltration rate is typically expressed in inches per hour. Water from rainfall or irrigation must first enter the soil for it to

be of value.

Linear density is the mass of the string per unit length. μ = mass. length. The linear mass density of the string can also be found by studying the relationship between the tension, frequency, length of the string, and the number of segments in the standing wave.

Drainage density is a measurement of the sum of the channel lengths per unit area. It is generally expressed in terms of miles of channel per square mile.

Direct surface runoff is the rain or meltwater that runs off during the rain or melt event as overland flow or in the vegetation cover above a frozen soil. The meltwater and the rain falling onto snow or on frozen ground reach a stream along different pathways.

Hydrograph. A chart or graph showing changes in water quantity in a stream or river over time

A unit hydrograph is a discharge

hydrograph resulting from one unit of net precipitation distributed uniformly over a watershed.
potential infiltration rate, of a soil [Horton, 1940] is the maximal rate at which the soil surface can absorb water.
runoff coefficient (C) is a dimensionless coefficient relating the amount of runoff to the amount of precipitation received. It is a larger value for areas with low infiltration and high runoff (pavement, steep gradient), and lower for permeable, well vegetated areas (forest, flat land).
The initial basin recharge is equal to all of the above i.e, interception, depression storage and rain absorbed by the moisture deficiency. Solution: Depression storage: Depression storage refers to little low spots on undulating terrain that can retain precipitation that would otherwise become runoff.
soil moisture deficiency -The difference between the amount of water actually in

the soil and the amount of water that the soil can hold.

W-Index: This is the average infiltration rate during the entire period of rainfall. In the calculation of the W-index. Initial loss is not treated as infiltration quantity.
ϕ – Index: It is a rate of infiltration in which, the rate of infiltration exceeds the value at which the volume of runoff becomes equal to the volume of rainfall.
basin outlet in hydrology
By definition, any point on the main drainage system can be selected as the basin outlet. Thus, a basin is defined with respect to the outlet. The physical boundary of the drainage basin is called the drainage divide.
A flood forecasting and warning system provides the information necessary to improve decision support for the operation of structures.
Effective rainfall (or precipitation) is equal

to the difference between total rainfall and actual evapotranspiration

Average Unit Hydrograph:

To obtain normal or average unit hydrograph for a basin several storms are taken and unit hydrographs plotted for each of them.

The hyetograph that we get after subtracting losses from the actual rainfall is called the excess rainfall hydrograph.

a direct runoff hydrograph resulting from one unit (one inch or one cm) of constant intensity uniform rainfall occurring over the entire watershed.

Reservoir routing means the procedures used to determine the attenuating effect of reservoir storage on a flood as it passes through a reservoir.

The antecedent moisture condition (AMC) is an indicator of the moisture of the catchment and provides soil moisture storage before the storm, and may have an important impact on the volume of runoff.

A combination of a hydrologic soil group (soil) and a land use and treatment class (cover) is a hydrologic soil-cover complex.