***2.2 Ground water flow***

**2.2.1 Introduction**

1. ***Ground water***

* It is water that exists beneath the earth's surface in underground streams and aquifers.
* It is found that underground where part/entire حيث الفراغات تكون بشكل جزئي او كليvoid spaces between particles of rock and soil, or in crevices and cracks in rock are filled with water.
* Groundwater an important part of the hydrologic cycle
* Some of the water from melting snow/rainfall seeps into the soil and percolates into the saturated zone to become

Groundwater recharge.

* Eventually, groundwater reappears above the ground into streams, rivers, marshes, lakes and oceans or as springs and flowing wells discharge.



* Groundwater faces the threat of contamination from waste sites.
* Properties of subsurface govern both the rate and direction of groundwater flow.

1. ***Vertical distribution of groundwater***

\* Groundwater can be characterized according to its vertical distribution.

\* Zone of aeration: consists of interstices فجوات occupied partially by water and partially by air.

* Soil water zone : extending from ground surface down through the major root zone
* Vadose zone : extending from lower edge of soil water zone to the upper limit of capillary zone
* Capillary zone: extending from the water table up to the limit of capillary rise.

\* Zone of saturation: all interstices are filled with water under hydrostatic pressure.