Utah State University **Name:**_____
Department of Civil and Environmental Engineering
CEE 6400 Physical Hydrology Midterm

Closed book portion. Answer all questions. Please answer on this paper.
20 min [25 points closed book portion. 100 points total.]

1. For each of the following hydrologic phenomena provide a brief definition and label/depict it on the diagram below

Return flow A

_____

Water table B

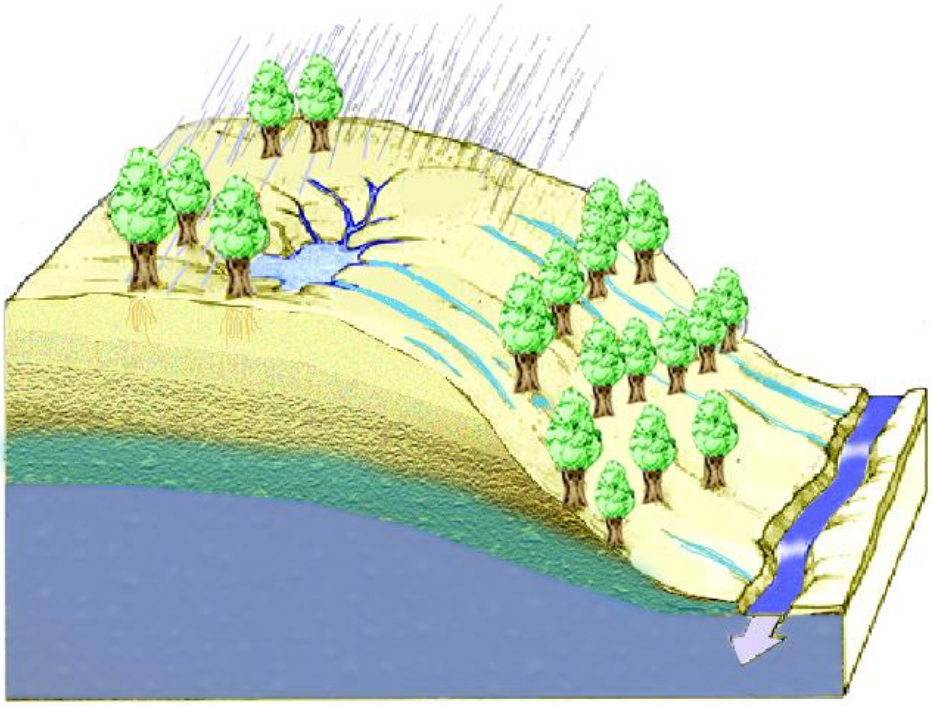
_____

Capillary fringe C

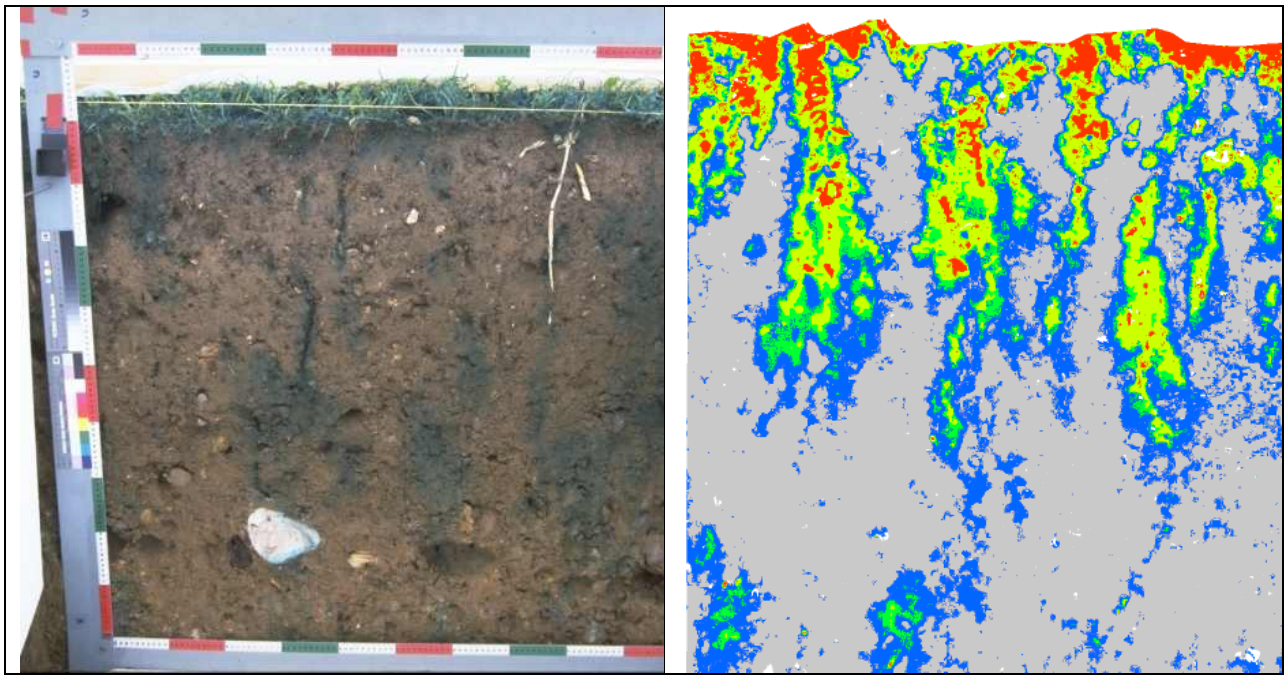
_____

Evapotranspiration D

_____



2. The pictures below have been shown in this class. Describe what they are and the hydrologic significance of the process they depict.



3. In an unsaturated soil, porosity is defined as (circle one):
    A. Volume of voids/Total volume
    B. Volume of voids/Volume of solids
    C. Volume of water/Volume of solids
    D. Volume of air/Volume of water
    E. Mass of Water/Density of soil

4. Volumetric moisture content is defined as (circle one):
    A. Volume of air/Volume of water
    B. Mass of Water/Density of soil
    C. Volume of water/Volume of solids
    D. Volume of water/Total volume
    E. Volume of voids/Total volume

5. Relative humidity is defined as (circle one):
    A. The dew point temperature divided by the air temperature as long as absolute (Kelvin) temperature unit are used
    B. The ratio of the saturated adiabatic lapse rate to dry adiabatic lapse rate
    C. The ratio of specific humidity to dew point
    D. The ratio of actual vapor pressure to saturation vapor pressure
    E. 0.622 e/P

6. Describe and explain the differences between infiltration excess and saturation excess runoff generation mechanisms

7. Describe what the Thiessen Polygon Method is used for: