

Exam 4 Review

In order to be prepared for Exam 4 you should be able to fully respond to each statement below

I. Unsafe Ground: Landslides and other Mass Movements

1. be able to explain the cause of mass movements
2. be able to describe how mass movements are classified
3. be able to fully describe each of the following movements
 1. creep
 2. solifluction
 3. slumping
 4. mudflow/ lahars
 5. landslides
 6. avalanches
 7. Rock fall
4. be able to describe a scarp
5. be able to describe how slope influences stability
 1. be able to define angle of repose
 2. be able to describe how gravity and cohesive forces influence stability
6. be able to describe types of failure surfaces
7. be able to describe the triggers of mass movements:
 1. Shocks and vibrations
 2. over steepening
 3. water saturation
 4. loading

II. Running Water

1. be able to describe what is meant by the hydrologic cycle
2. be able to describe how stream flow begins at the surface
3. be able to describe the formation of the following drainage networks:
 1. dendritic
 2. rectangular
 3. trellis
 4. parallel
4. be able to describe what a drainage basin is
5. be able to describe what a watershed is
6. be able to describe a divide

7. be able to define a **permanent stream** and the conditions necessary to produce these types of streams
8. be able to define an **ephemeral stream** and the conditions necessary to produce these types of streams
9. be able to define **discharge**
10. be able to describe the conditions that influence stream velocity and where to find the highest velocity water within a stream channel
11. be able to define **turbulence**
12. be able to describe the processes that lead to stream erosion:
 1. **scour**
 2. **abrasion**
 3. **dissolution**
13. Be able to describe stream load:
 1. **bed load**
 2. **dissolved load**
 3. **suspended load**
14. be able to define **competence** and **capacity**
15. be able to describe how changes in stream characteristics influence the streams competence and capacity
16. be able to define **base level** and **ultimate base level**
17. be able to describe the shape and cause of stream valleys and canyons

III. Ground Water

1. be able to describe groundwater
2. be able to describe how groundwater fits into the hydrologic cycle
3. Be able to define **porosity**
 1. be able to explain how porosity varies with particle size
 2. be able to distinguish between primary and secondary porosity
4. be able to describe **permeability**
5. be able to define **aquifer** and **aquitard**
 1. what is an **unconfined aquifer**
 2. what is a **confined aquifer**
6. be able to describe the water table
 1. what is the **vadose zone**?
 2. what is the **capillary fringe**?
 3. be able to describe how the water table fluctuate with the seasons
7. be able to describe **Hydraulic Head**

8. be able to describe [Darcy's Law](#) and how it applies to ground water motion
9. Be able to describe springs
 1. be able to describe the conditions necessary to form an [artesian spring](#)
10. be able to describe the hazards associated with groundwater

IV. Glaciers

1. be able to describe the formation of glacial ice
 1. what is [firn](#)
2. be able to describe the conditions necessary for glacial formation
3. be able to describe the two types of glaciers
4. be able to describe the movement of glaciers
 1. [basal sliding](#)
 2. plastic deformation
5. be able to identify where brittle and ductile flow occurs in glaciers
6. be able to describe the [zone of accumulation](#)
7. be able to describe the controls of glacial velocity
8. be able to describe the processes that lead to:
 1. [ablation](#)
 2. [retreat](#)
 3. [advance](#)
9. be able to describe the processes by which glaciers erode the surface.
10. be able to describe the shape and formation of glacial erosional features:
 1. [Cirques](#)
 2. [Aretes](#)
 3. [Horns](#)
 4. [U-shaped valley](#)
 5. [Hanging Valleys](#)
11. be able to describe glacial depositional materials:
 1. [glacial till](#)
 2. [erratics](#)
 3. [outwash](#)
 4. [loess](#)
12. be able to describe glacial depositional features:
 1. [end moraine](#)
 2. [medial moraine](#)
 3. [ground moraine](#)

4. kettle holes

5. eskers

13. be able to describe Long Islands glacial features