Mass Movement Revision Notes

Mass Movement
It is the movement of material downslope under the influence of gravity. The loose material is called regolith.

Factors that affect mass movement
1. Gradient (Slope): The steeper the slope the faster the mass movement
2. Vegetation: It slows down mass movement, as the roots of plants bind the soil
3. Human activity: It can speed up the rate of mass movement by undercutting hillsides for road building etc.
4. Water content: This can speed up mass movement by loosening the regolith

Categories of mass movement
Slow: Soil Creep
Fast: Landslide, Avalanche, Bogburst, Mudflow

Types of mass movement
(Marking Scheme: 6 marks, 3 pieces of information @ 2 marks each, any combination of causes or explanation)

Soil Creep
- The slowest type of mass movement at speeds of less than 1 cm per year
- Slope creep occurs on gentle slopes
- It is only noticed by its effects on surface objects

Landslides
- It occurs on steep slopes and is a rapid type of mass movement
- It happens when the regolith becomes unstable due to undercutting by the sea or human activity e.g. mining, road building
- It can also occur after heavy rainfall, volcanoes or earthquakes e.g. Pollnathomas, Northwest Mayo, September 2003

Bogburst
- Bogbursts are most common in upland areas
- The peat becomes saturated with water, after heavy rainfall, and quickly moves downslope destroying everything in its path e.g. Derrybrien, Co. Galway, October 2003

Mudflow
- Mudflows are very rapid and often occur after heavy rain
- Soil is saturated and turns to mud
- It can also occur after volcanic activity

Higher Level Only
Case Study Mudflow
What? A mudflow occurred after a volcano erupted (2 marks Name it)
Where? Nevado del Ruiz, Colombia
When? 1984
Causes: (4 marks Outline what happened = 2 marks Statement + 2 marks Dev)
- A snow covered volcanic mountain erupted (statement)

- The heat melted the snow (Development)
- Water + Ash = Mudflow (Development)
- The mudflow was up to 20m deep and travelled at 80km per hr (Dev)

Effect? Negative? (2 marks Negative effects = 1 statement + 1 development)

- 21,000 people killed (statement)
- 5,000 homes in the town of Armero were destroyed (development)