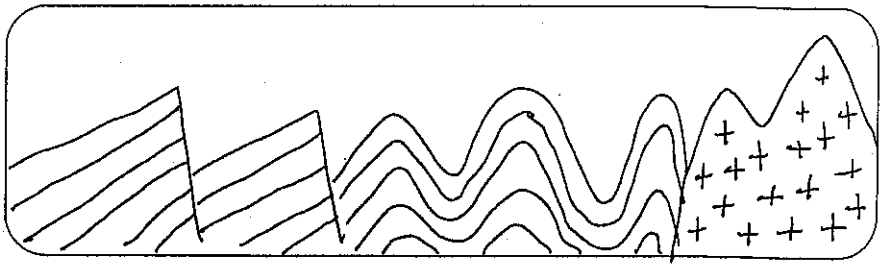
Topic XIV
Landscape Development and Environmental Change
Landscapes (Topography)

Factors

1. _____
2. _____
3. _____
4. _____

There are three basic types of landscapes

1. _____
2. _____
3. _____

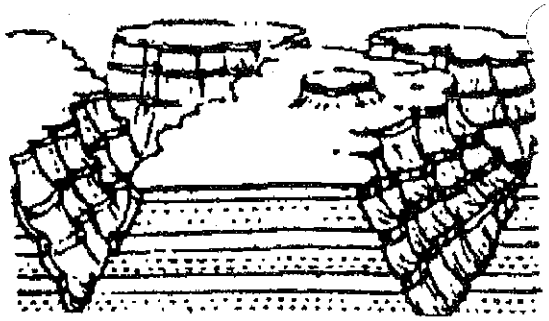


Mountains

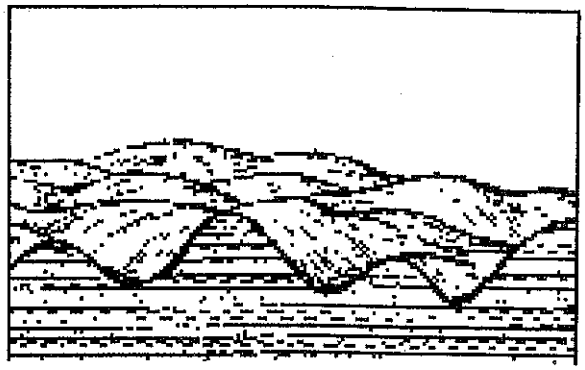
Characteristics

- High elevations over 1000ft or 300m from base to peak
- Steep slopes
- Relief is _____
- Strata tends to be either/both _____and _____
- _____and _____rocks dominate
- _____ soil

Plateaus



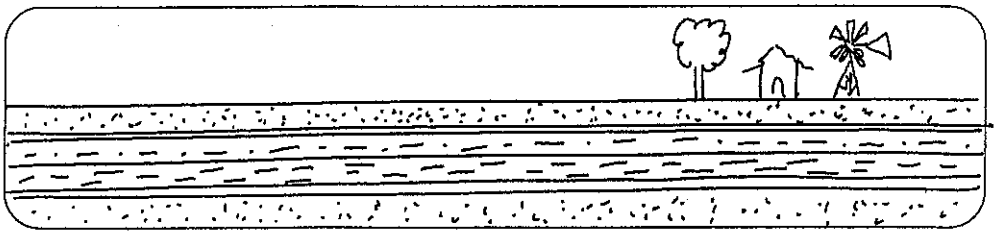
- High elevations above sea level over 1000ft
- Steep slopes leading to the top



- _____ rocks are dominate
- Relief is _____
- Thin soils

Plains

- _____ elevations
- Leveled by erosion and weathering
- Relief is _____
- Subsidence (sinking)
- Thick soils great for farming



Soil associations

Soils differ in: permeability composition
Porosity thickness

Geologists try to group them… into associations

Landscape Regions

Factors are slope, elevation, bedrock, structure, stream drainage

Boundaries—Mountains, cliffs, rivers, escarpments

Landscape Development.

In developing the landscape it is a factor of two forces either dominating each other or in balance.

2 forces involved

1. _____-Building (constructional force)
   - Orogenesis (mountain building)
   - Isostacy
   - Volcanoes

2. _____- Destructive force
   - Erosion
   - Weathering
   - Subsidence
   - Deposition

Both occur at the same time

****** But one will usually dominate ******

Stages of development

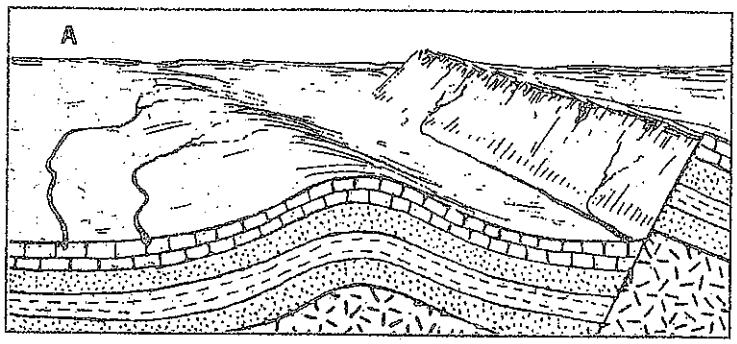
A. Uplifting is dominant ---- "youthful"

B. Leveling is dominant --- "Mature"

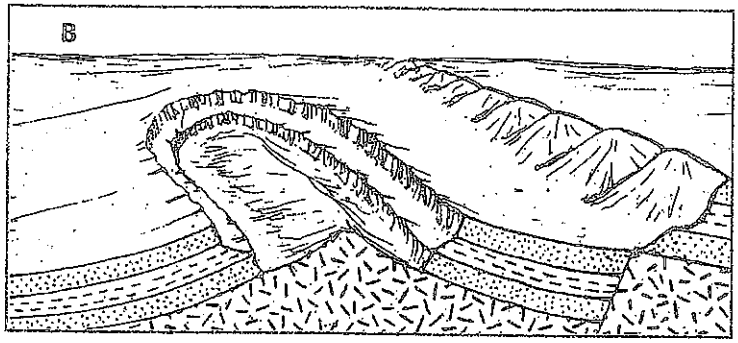
C. Leveling is less and there is no uplift --- "old age"

D. Rejuvenation --- new uplifting begins more potential energy

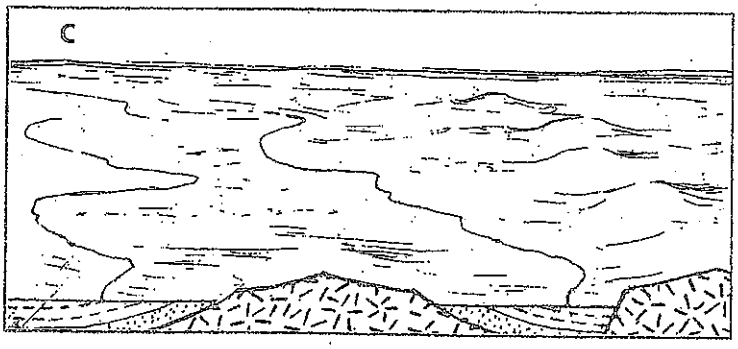
Stages of landscape development



Youth Uplifting forces are dominant, causing folding and faulting, and the formation of mountains with high elevations and steep slopes.



Maturity Leveling forces are dominant, creating a rugged landscape with lower elevations.



Old Age Leveling forces are still dominant but less effective because low elevations and gentle slopes provide little potential energy.

Factors of landscape Development

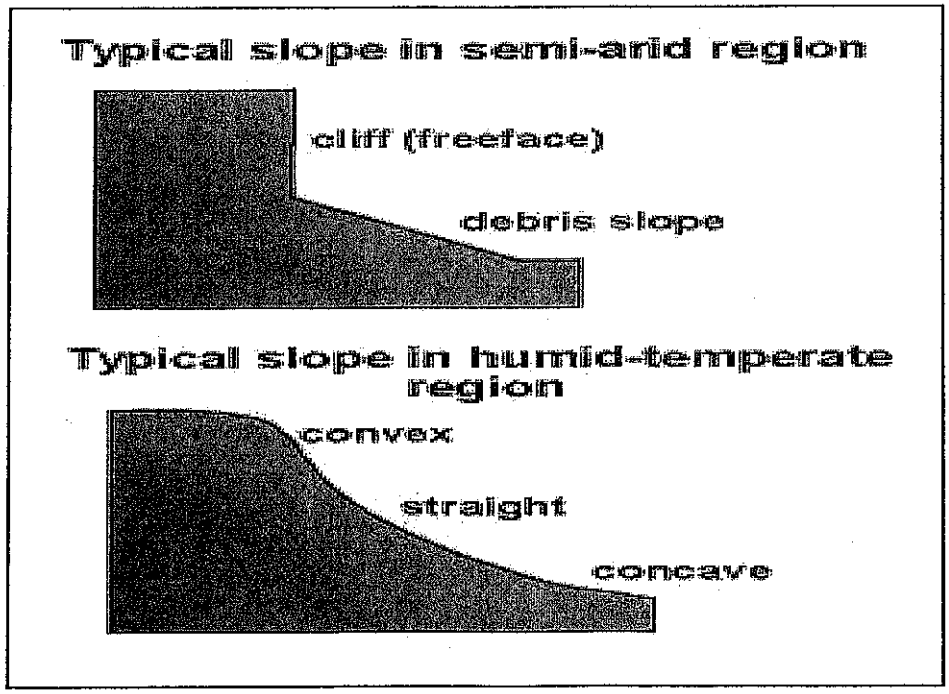
Climate

Arid - little veg. Which leads to erosion, weathering

- steep slopes
- thin soils
- rough landscape - sharp features
- sand wind blown erosion
- physical weathering is dominate

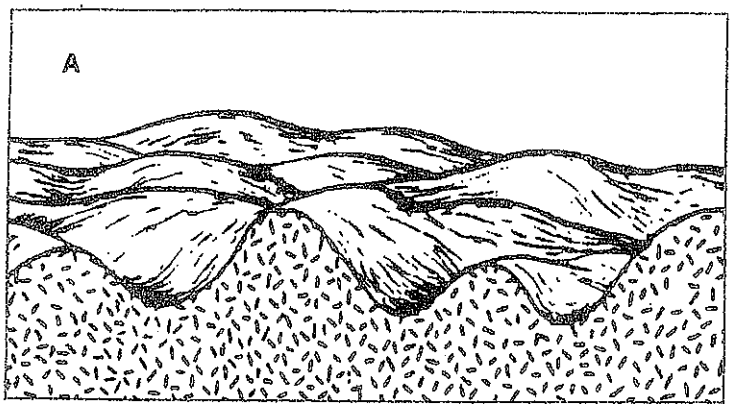
Humid

- More veg. Holds soils together
- Soils thick dark
- CHEMICAL WEATHERING
- Rounded landscapes

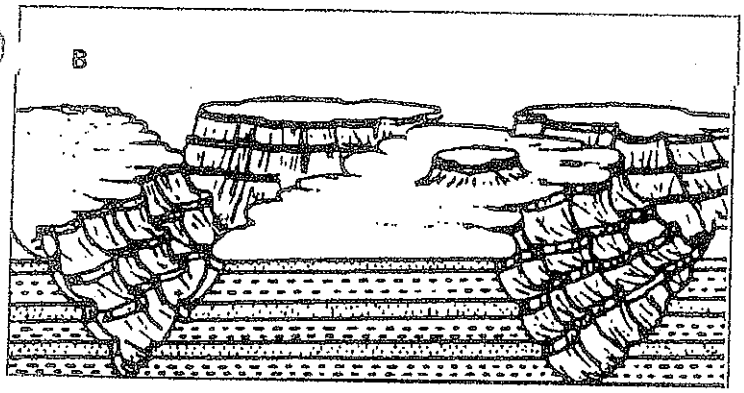


Bedrock

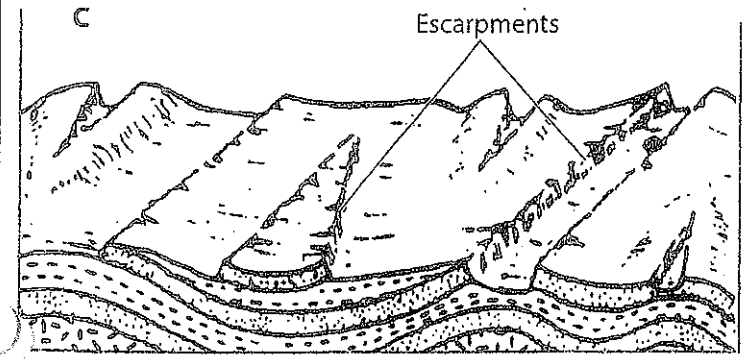
The composition, strength, and structural features of the bedrock are major factors of development of the landscape



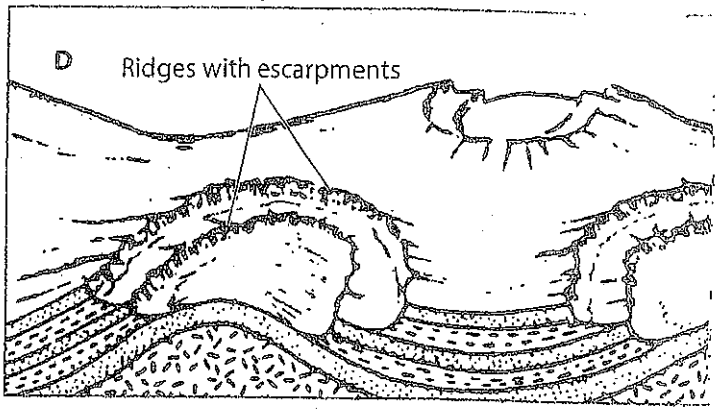
Random mountain landscape pattern This landscape of random rounded mountaintops can form in a humid climate with little difference in rock resistance due to similar rock types and no major structural distortion of the rocks.



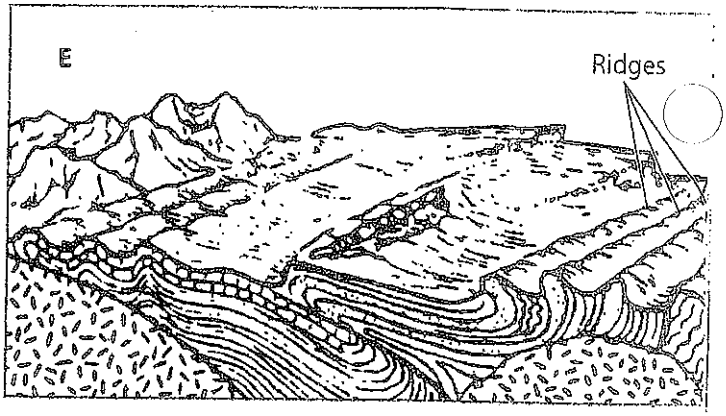
Horizontal undistorted sedimentary rocks of a plateau This landscape of an arid region has uniform elevations, with steep V-shaped valleys cut by streams. Note the sandstone layers result in steeper cliffs because the sandstone is a more resistant rock.



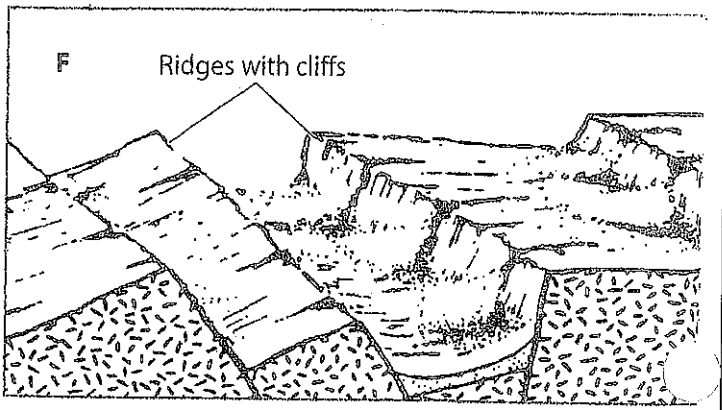
Gently folded sedimentary strata of varying resistance Note that the resistant sandstone forms steep escarpments, or cliffs, in this mountain landscape.



Domed mountain structure of folded sedimentary rocks above intrusive igneous rocks This landscape resembles diagram C, but the steeper folding results in ridges with steep-sided escarpments or cliffs.



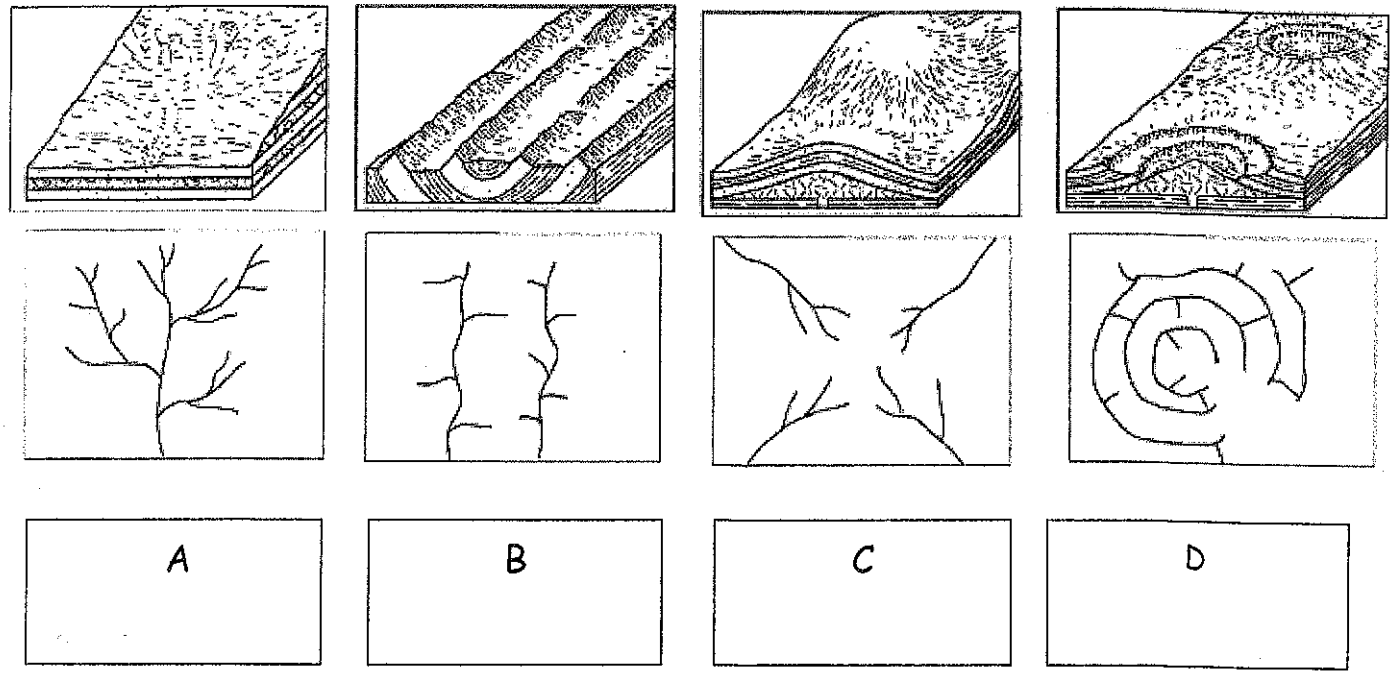
Complex bedrock structure This mountainous region consists of faulted, folded, and intruded rocks of all three rock types. Some of the more-resistant sedimentary rock layers form ridges of varying elevations and slopes.



Fault block mountain in igneous rocks This landscape of ridg of varying elevations is caused by faulting.

Stream and bedrock Characteristics

These you must memorize the material



A- Random or Dendritic drainage: This pattern is characteristic of horizontal sedimentary rocks and lava flows with little difference in rock resistance

B- Trellis or block drainage: this pattern is observed in folded rocks with much difference in resistance and also in faulted and jointed rock

C- Radial drainage: This pattern occurs in areas of domed structure (such as some volcanoes) with little difference in rock resistance

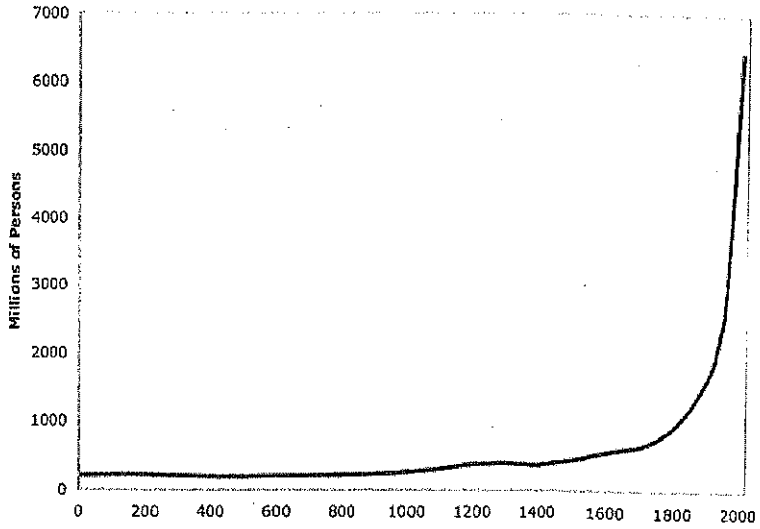
D- Annular drainage: This pattern of concentric circles is found in areas of domed structure with much difference in rock resistance

****You have to memorize these diagrams with the characteristic there is always one question on the exam concerning drainage patterns*

People and environmental change

Population growth exponentially

What are the possible outcomes of having overpopulation?



Effect landscape

- ✓ Cut down forests
- ✓ Carve out roads
- ✓ Mining more for fuel
- ✓ Pollution

How has technology increased destruction?

Technology may be the answer to the solution