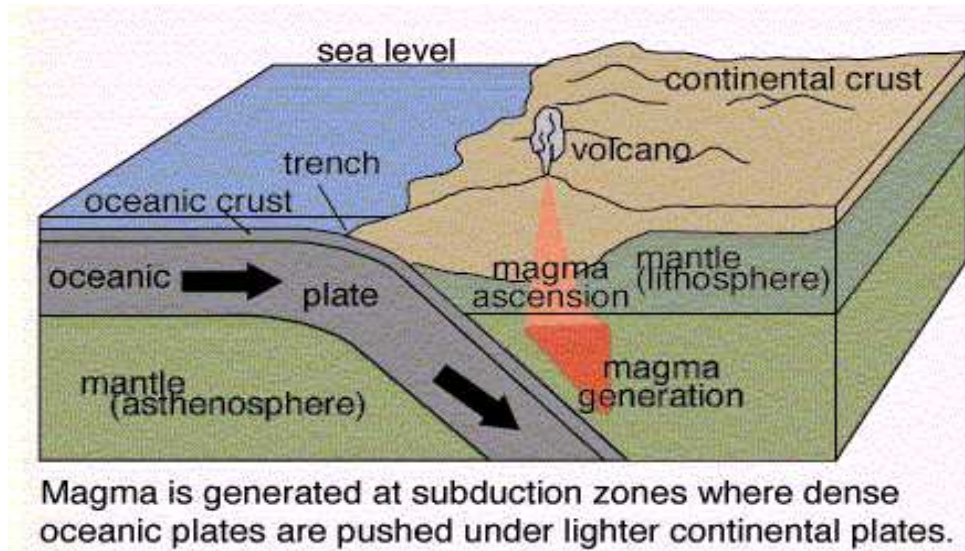


WHY THERE ARE NO VOLCANOES IN THE HIMALAYAS?

- Volcanoes occur at the destructive plate margins of one oceanic and another continental plate.
- Volcanoes occur due to subduction of denser ocean crust into and underneath lighter, lower density continental crust.
- As the oceanic plate dives deeper and deeper, the ocean crust warms, melts, and rises upward through the overriding continental crust “inland” from the plate collision boundary.
- As that molten rock punches through the continental crust, a curvilinear series of volcanoes, generally parallel to the plate collision boundary, begins to form. Example: Cascade Range



- However, the **Himalayas were formed due to continent-continent collision.**
- Continental crust is less dense than oceanic crust and when two continents meet at a destructive plate margin, there is slow collision rather than any marked subduction.
- This result in folding, fault and uplift and leads to formation of a mountain in a mountain building period called orogeny.
- In case of the Himalayas, the Indi-Australian plate to the south collided with the Eurasian plate to the north. As both are continental crust, there is no appreciable difference in density. None is subducted deep enough to form volcanoes.

Divergent plate boundaries:

- Splitting and lateral spreading of plates creates fractures and faults
- As a result, pressure is released a melting point is lowered
- Consequently, materials of upper mantle are melted
- These materials move upward as magma under the impact of enormous volume of accumulated gases and vapour
- This rise of magma along mid oceanic ridges causes fissure eruptions of volcanoes and constant upwelling of lava

Convergent plate boundary:

- Associated with explosive type of volcanic eruption
- When two convergent plates collide, the heavier plate is subducted below the lighter plate
- After reaching a certain depth, the subducted plate margin melts and magma is formed