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Program: B-Tech Civil

Subject: Introduction to  
Earthquake Engineering

Semester# 06

Assignment# ...0.1...

Submitted to: Engineer  
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❖ **Classification of Earthquake on The Bases of :**

- **Cause of Origin**
- **Depth of Focus**
- **Intensity & Magnitude of Earthquake**

**A. Cause of Origin:**

▪ **Tectonic:**

Earthquakes occur when the plates move against one another. This movement can create stress that causes the earth's exterior shell, the lithosphere, to shift or break.

▪ **Non-tectonic Earthquakes:**

The non-tectonic earthquakes are mainly of three types due to surface causes, volcanic causes and collapse of cavity roofs.

**B. Depth of Focus:**

▪ **Surface Earthquakes:**

Surface earthquakes are those in which the depth of the focus is less than 10,000 meters.

▪ **Shallow Earthquakes:**

The earthquakes with the hypocenter at a depth of 10 to 50.

▪ **Intermediate Focus Earthquakes:**

When the earthquakes is originated at a depth of 50 to 300 Kms.

▪ **Deep Focus Earthquakes:**

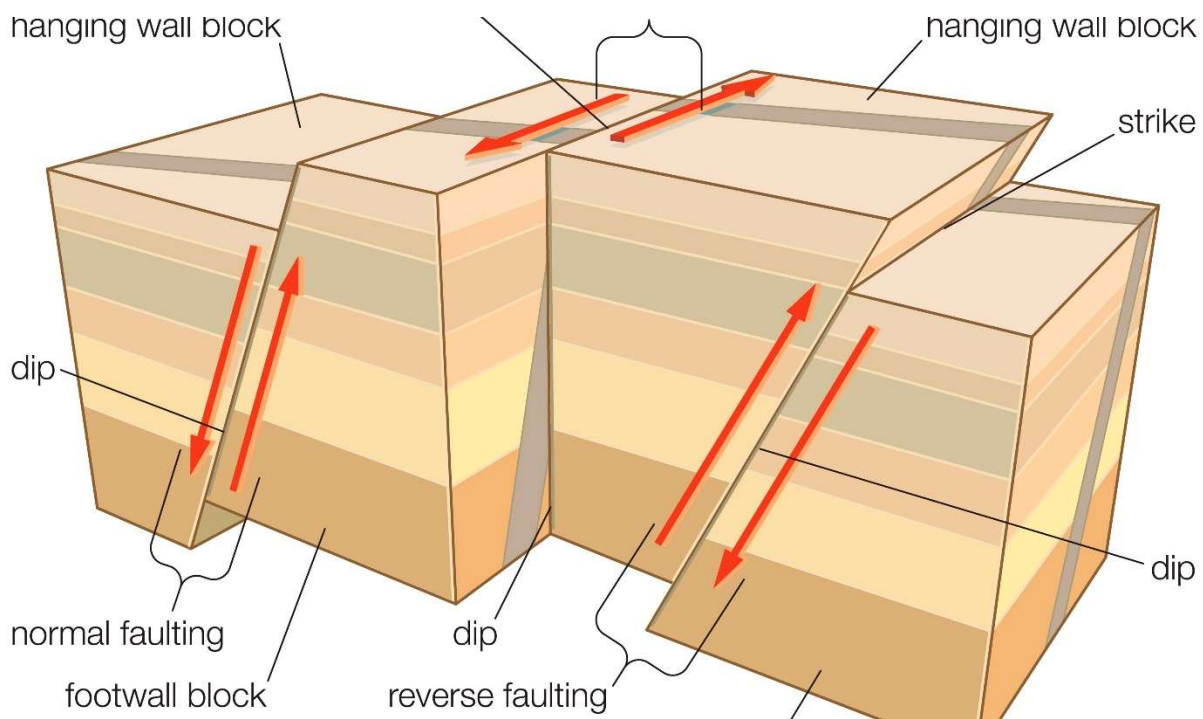
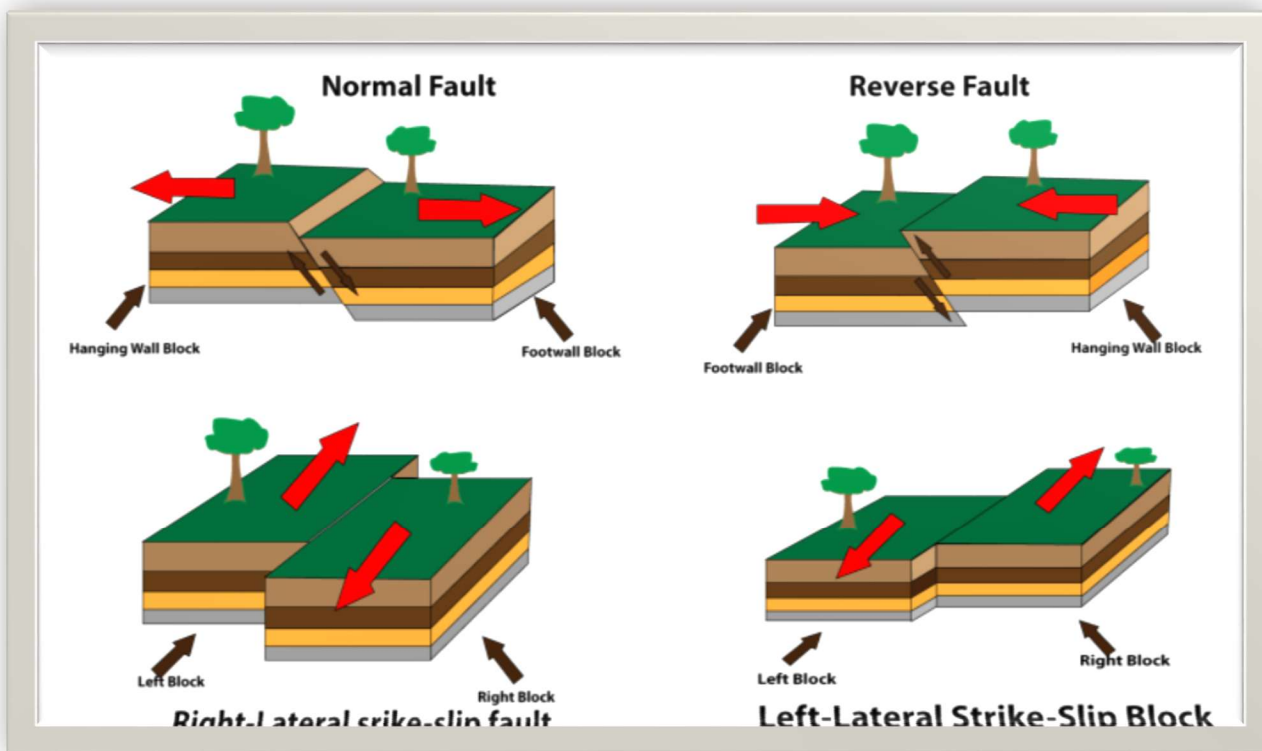
The deep focus earthquakes or the plutonic earthquakes are those with hypocenters located at depths more than 300 Kms. Majority of the deep focus earthquakes originate between 500 and 700 Kms.

**C. Intensity and Magnitude of Earthquakes:**

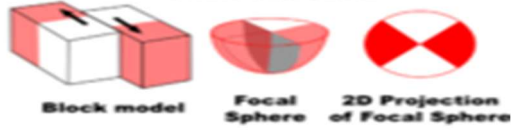
- **Rossi Forrel's Scale**
- **Mercalli Scale**
- **Richter Scale**

❖ **Draw a Labeled Diagram Showing The Following Terminologies:**

- **Dip**
- **Strike**
- **Normal, Reverse and Strike Slip Faulting**



**Strike-Slip/Shear**



**Normal/Extension**



**Reverse/Thrust/Compression**



**Transension  
(extension+shear)**



**Transpression  
(compression+shear)**

