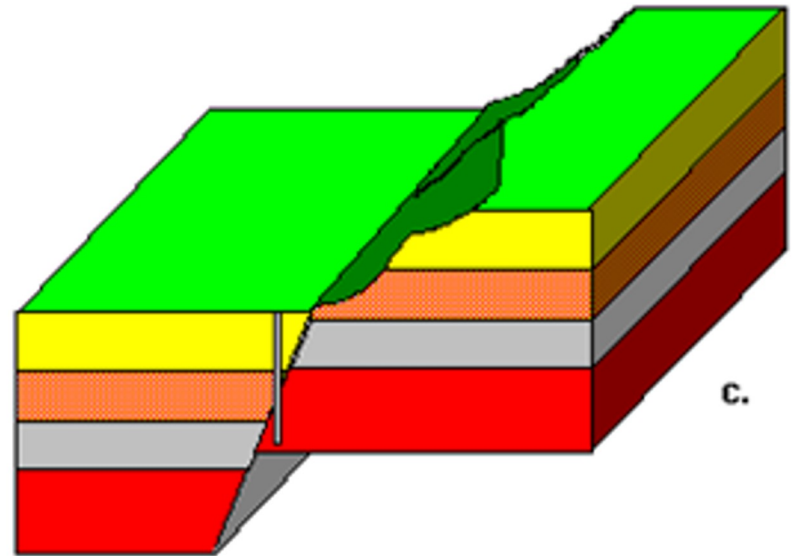
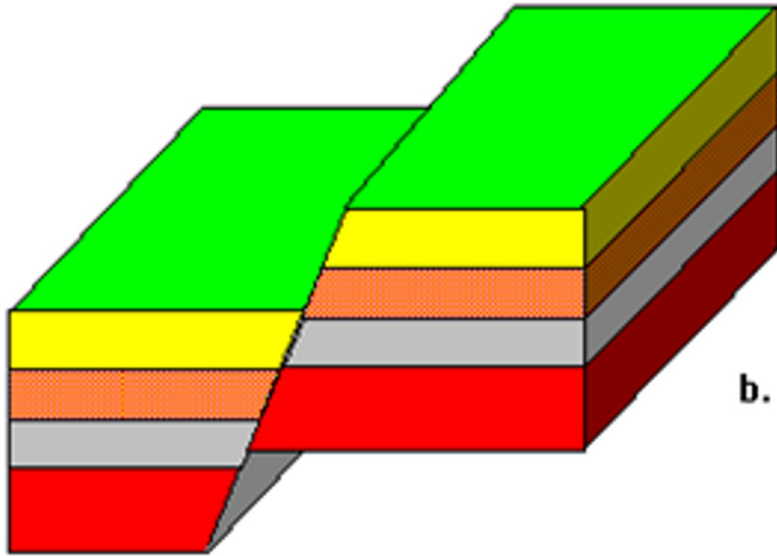
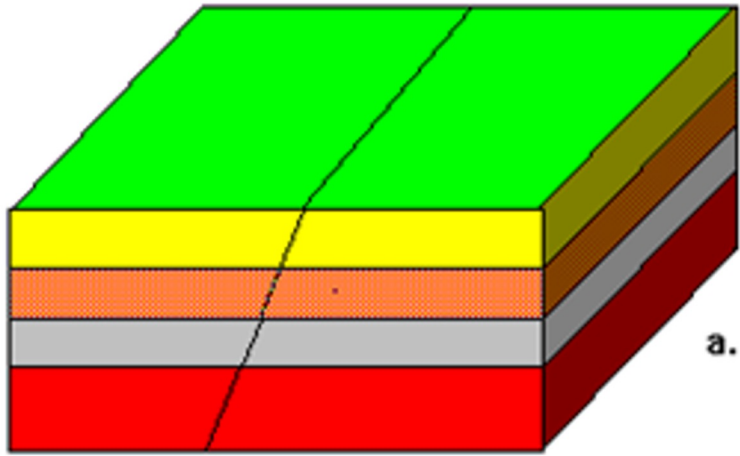


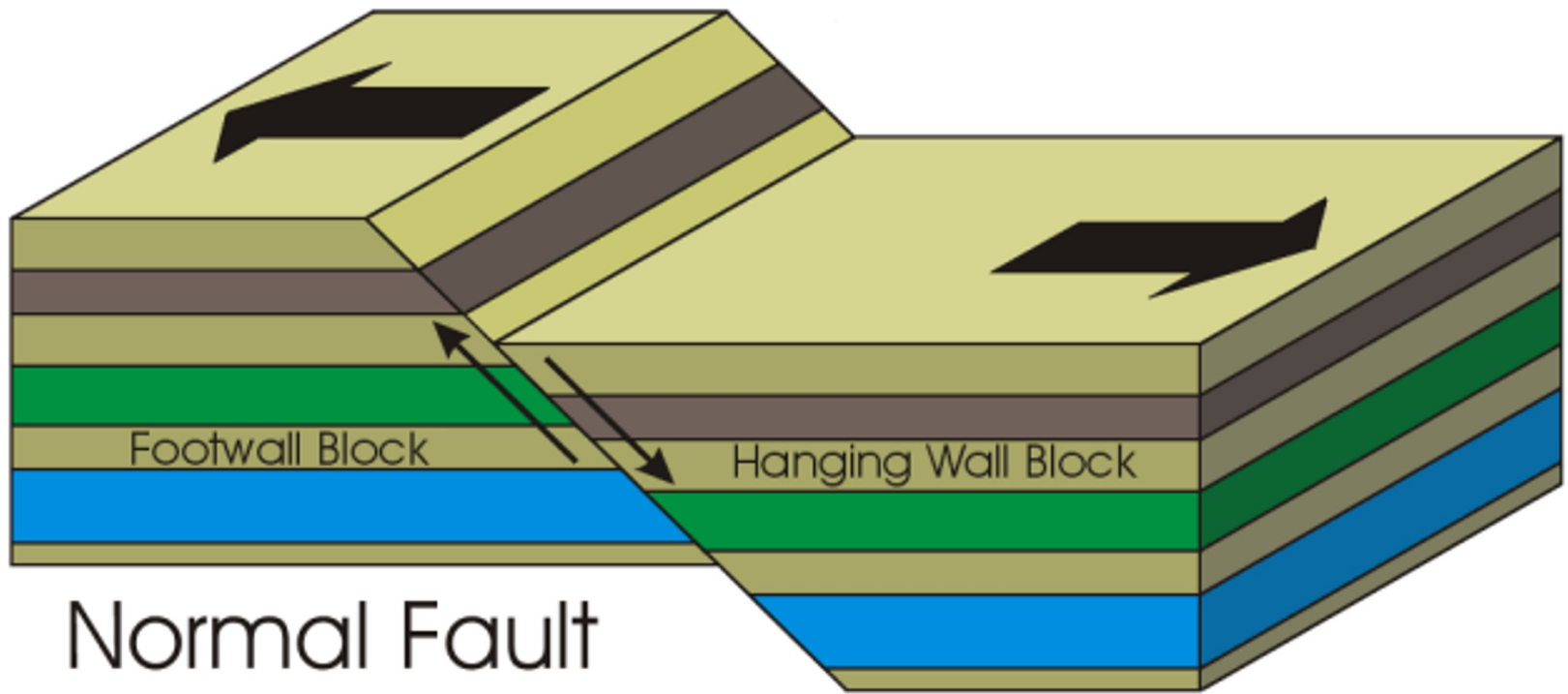
Faults

Faults

- **Fractures** formed due to the relative movement of the blocks are termed as faults
- The **entire process** of development of fractures and displacement of the blocks are termed as

Faulting

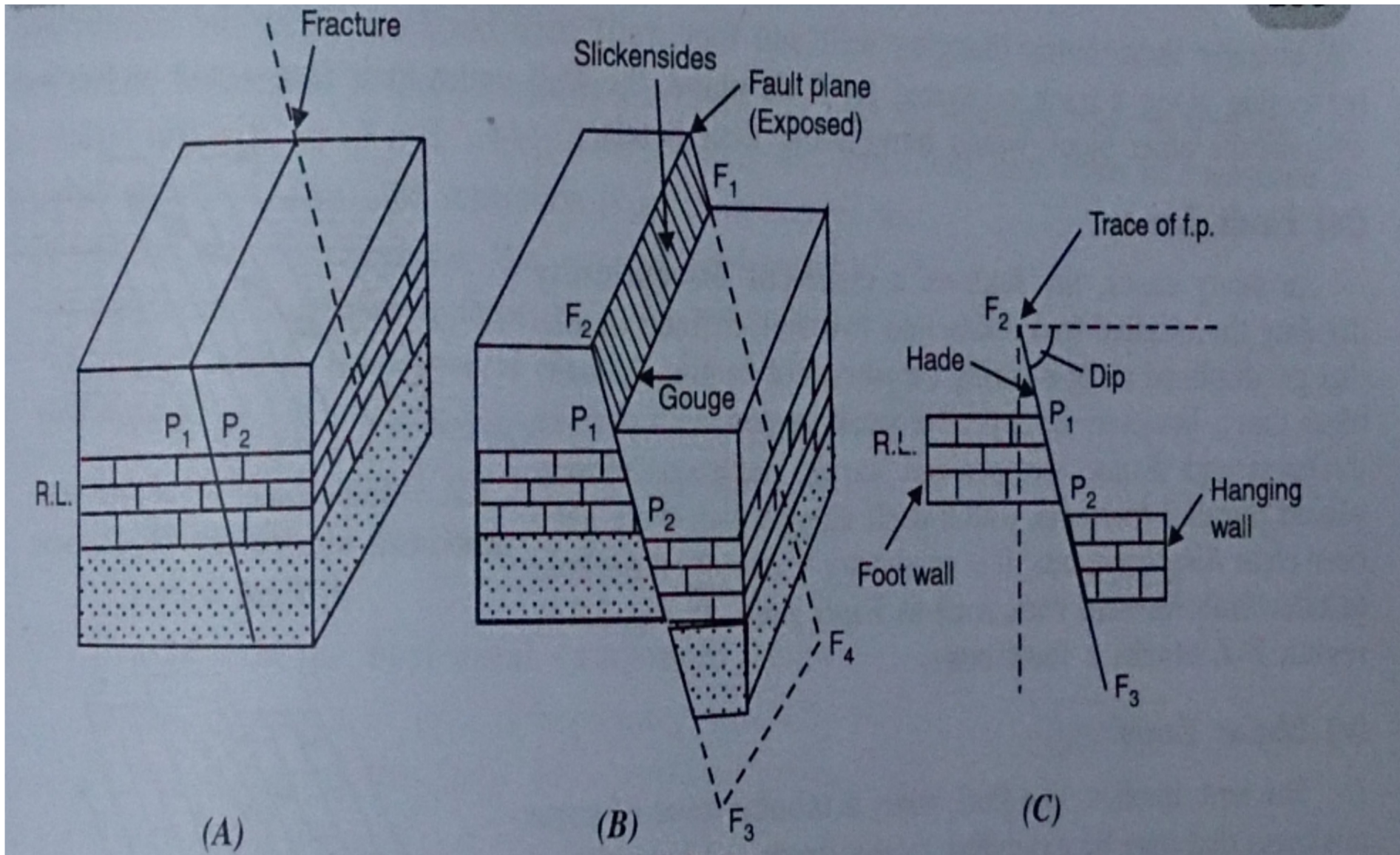




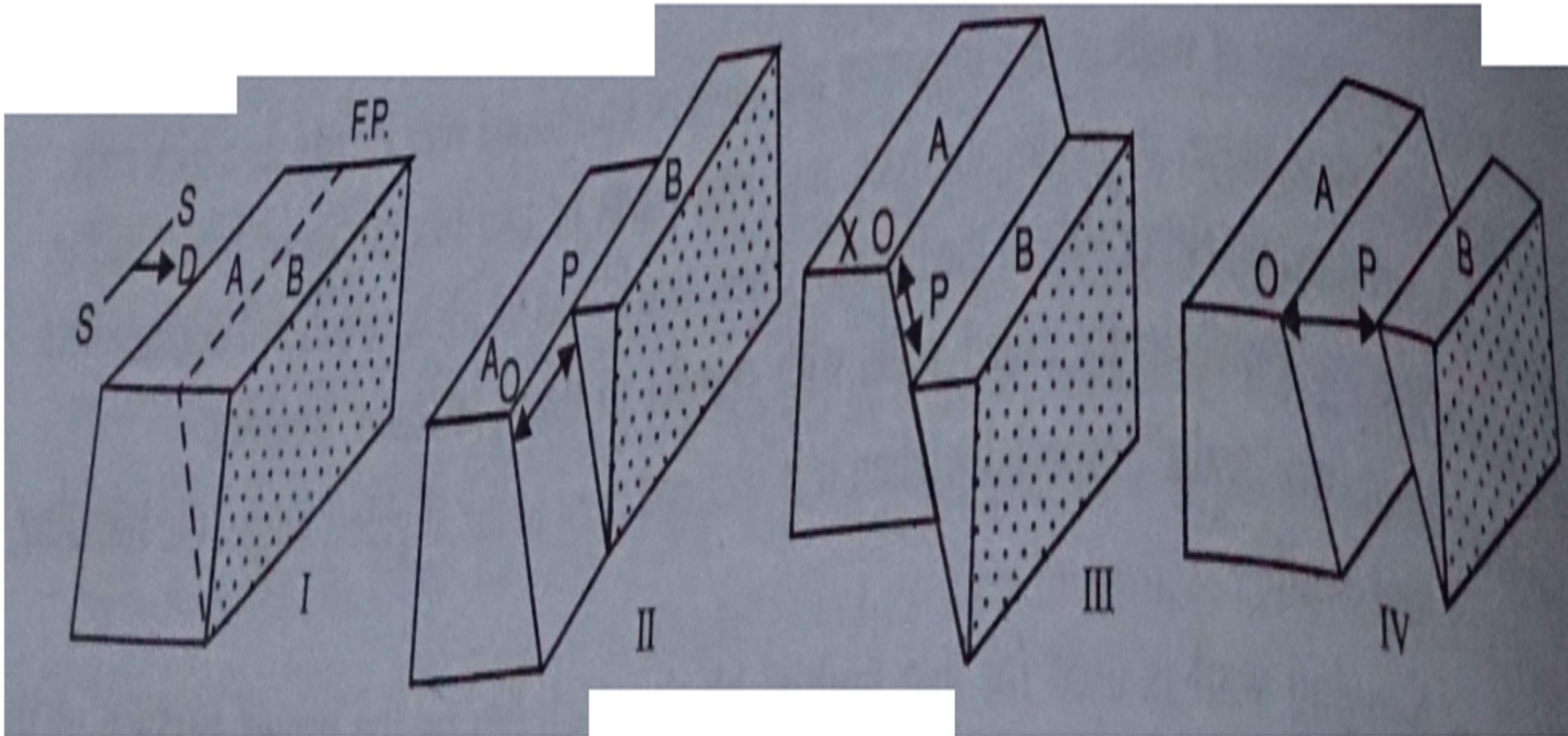
Normal Fault

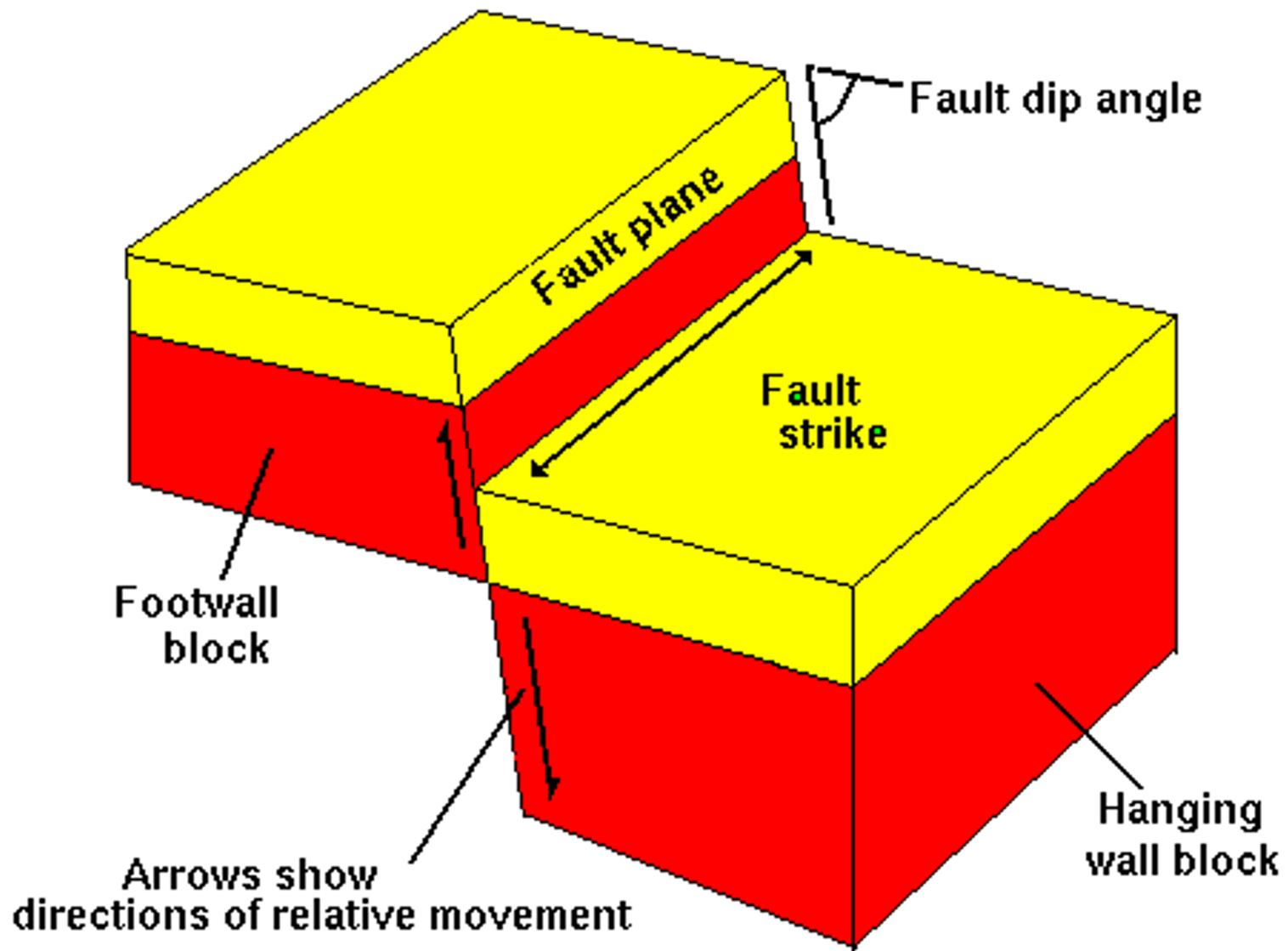
Fault terminologies

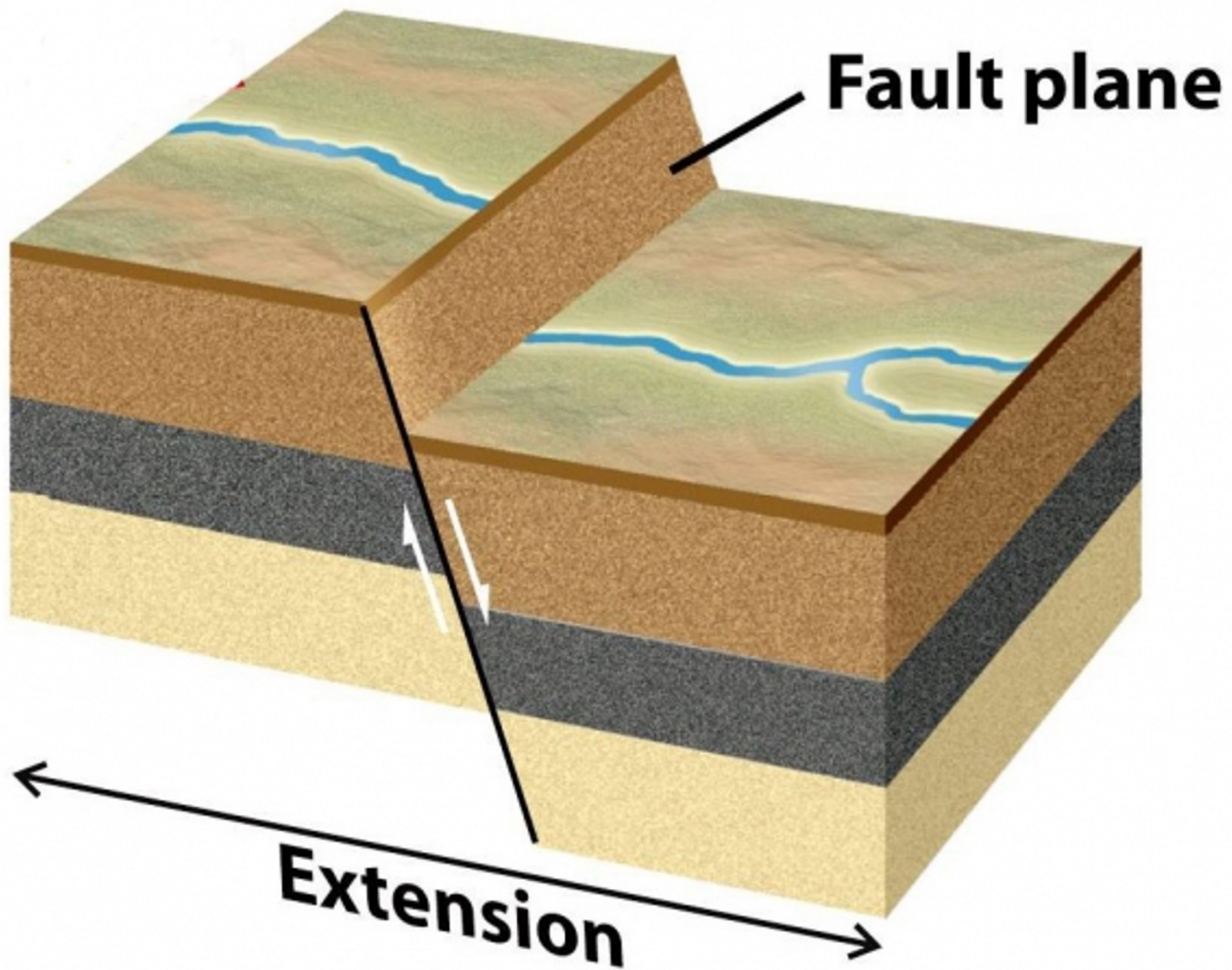
- Fault plane
- Dip
- Hanging wall and foot wall
- Slip and separation
- slickensides



Slip and separation







Classification of faults

1. Apparent movement of disrupted blocks
2. Direction of slip
3. Attitude of fault as basis
4. Mode of occurrence as basis

Apparent movement as basis

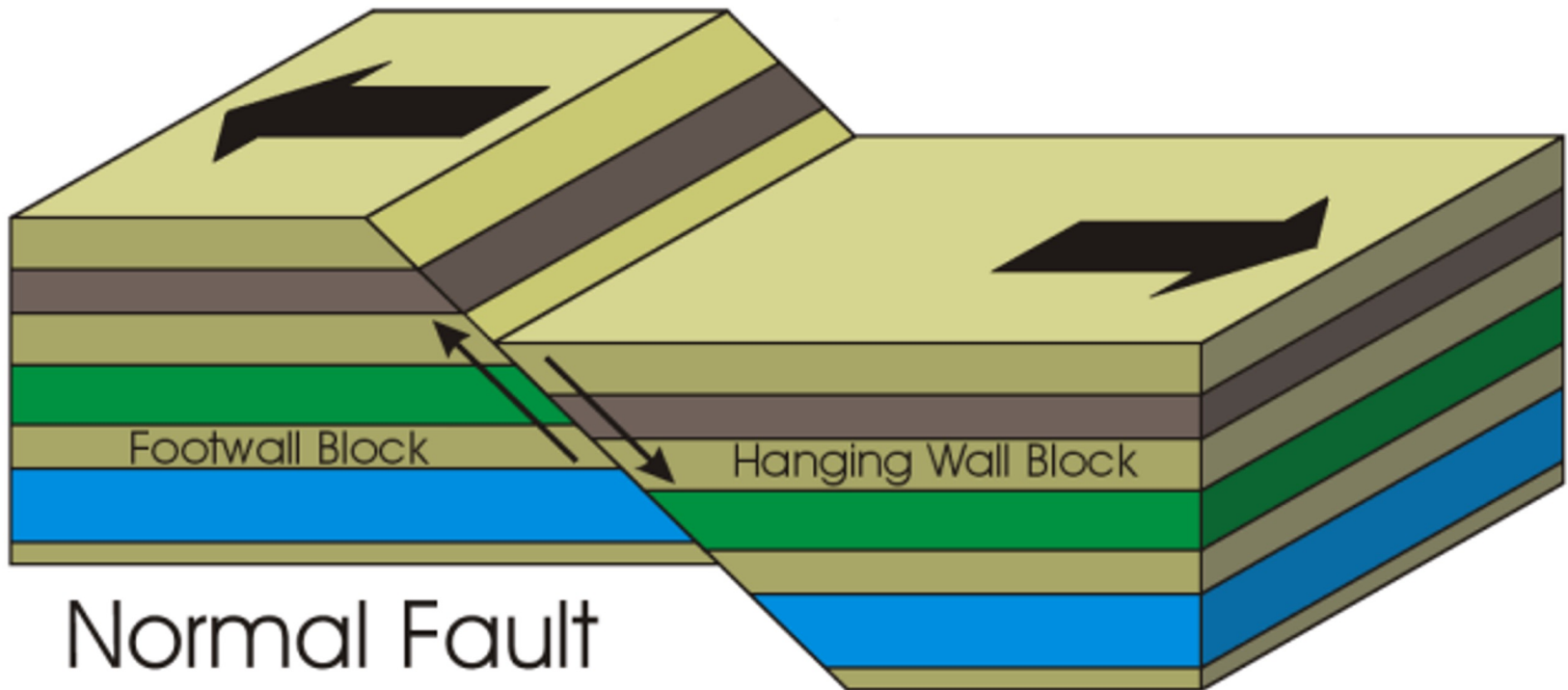
Apparent Movement as basis

1. Normal faults
2. Reverse faults
3. Strike slip faults
4. Hinge faults

Normal faults

- The fault in which hanging wall has moved down with respect to foot wall is called as Normal Faults

Normal faults



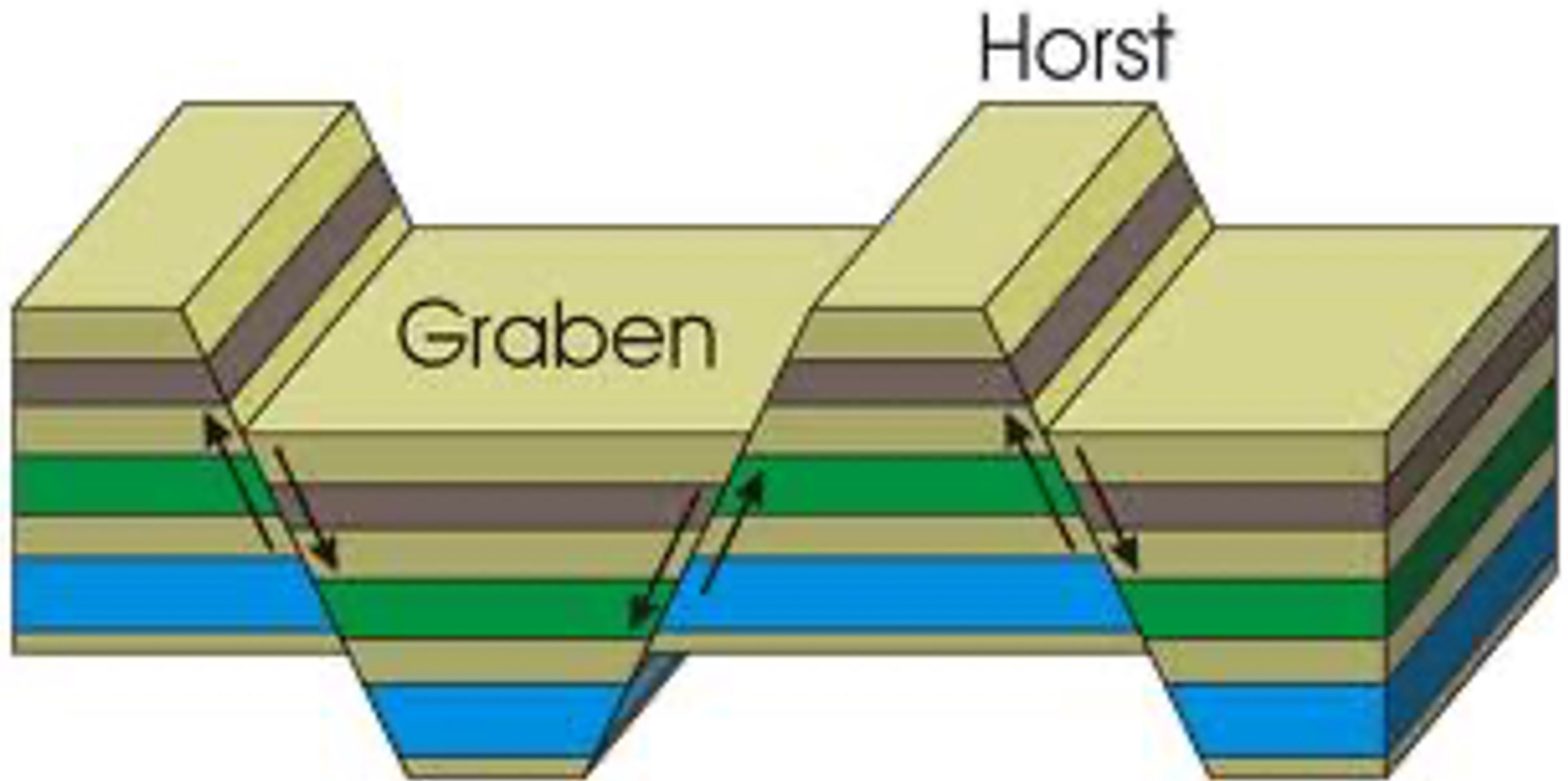
- Physiographic features caused by normal faults are

1. Horst and Graben

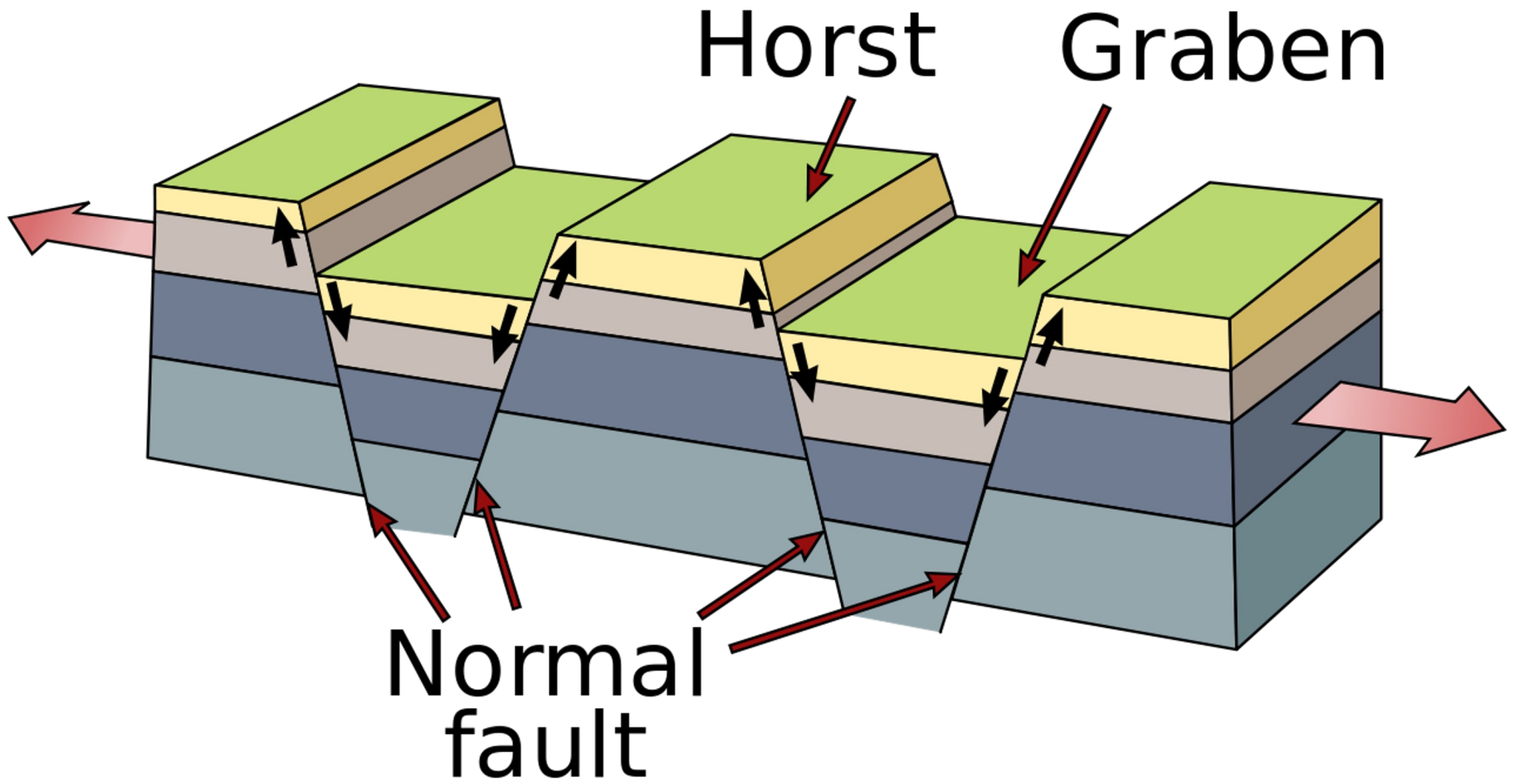
2. Vertical faults

Horst and Graben

- A central wedge block that appears raised high up between two normal faults on either side, such type of block structure is called a Horst.



- Graben , it is almost reverse of a horst in structure and appearance
- A wedge shaped central block appears to have **moved downward** with respect to the side blocks.

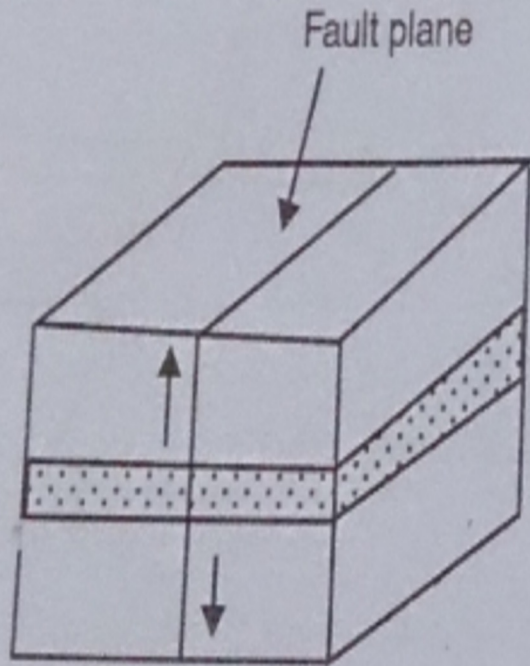


Vertical faults

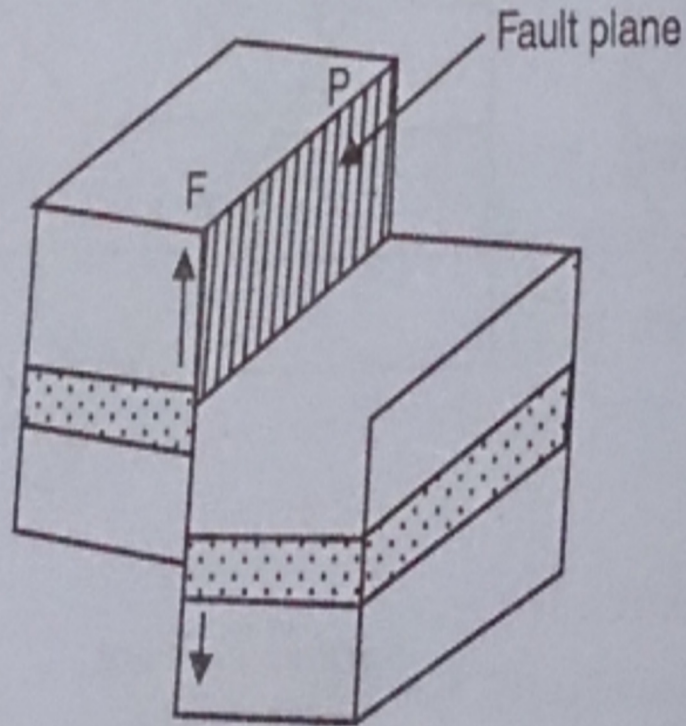
- Faults in which the fault plane is vertical or the movement of block in a vertical direction are termed as

Vertical faults

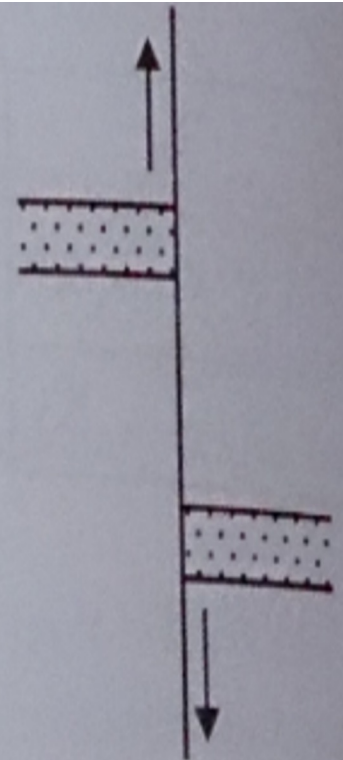
Vertical Faults



(a)



(b)

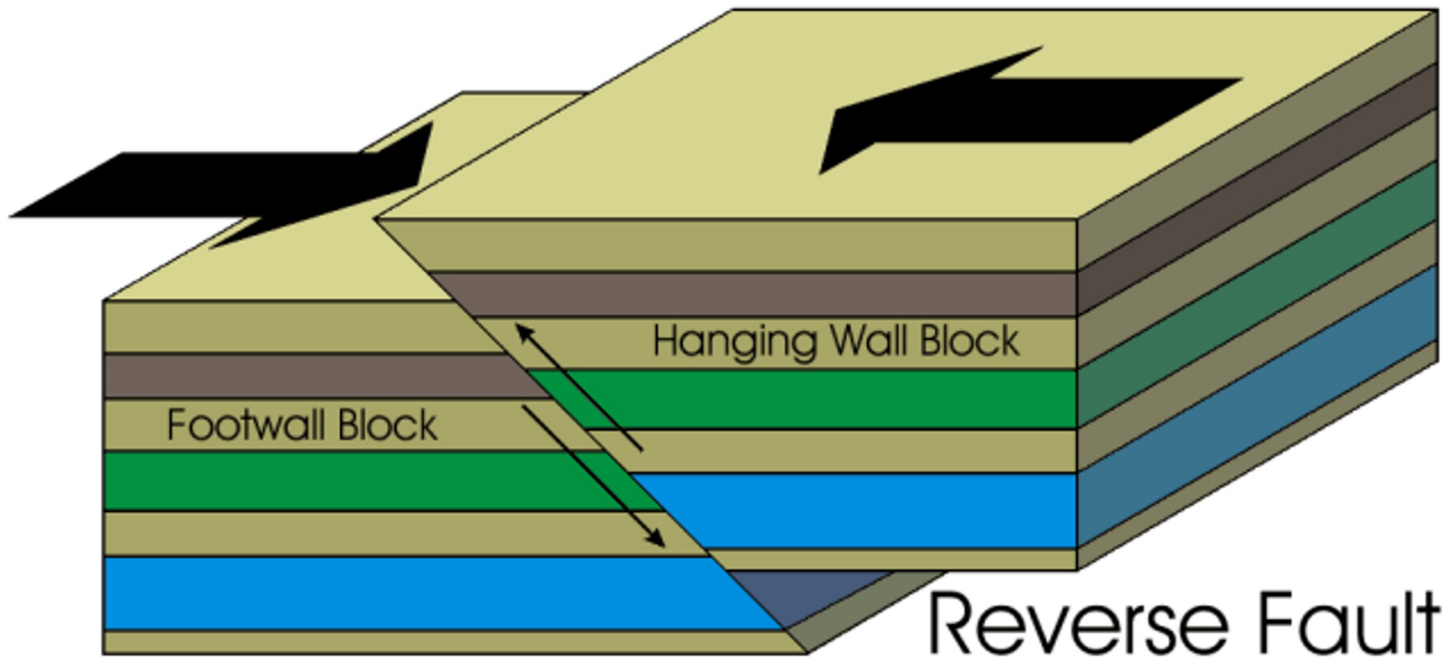


(c)

Vertical Faults

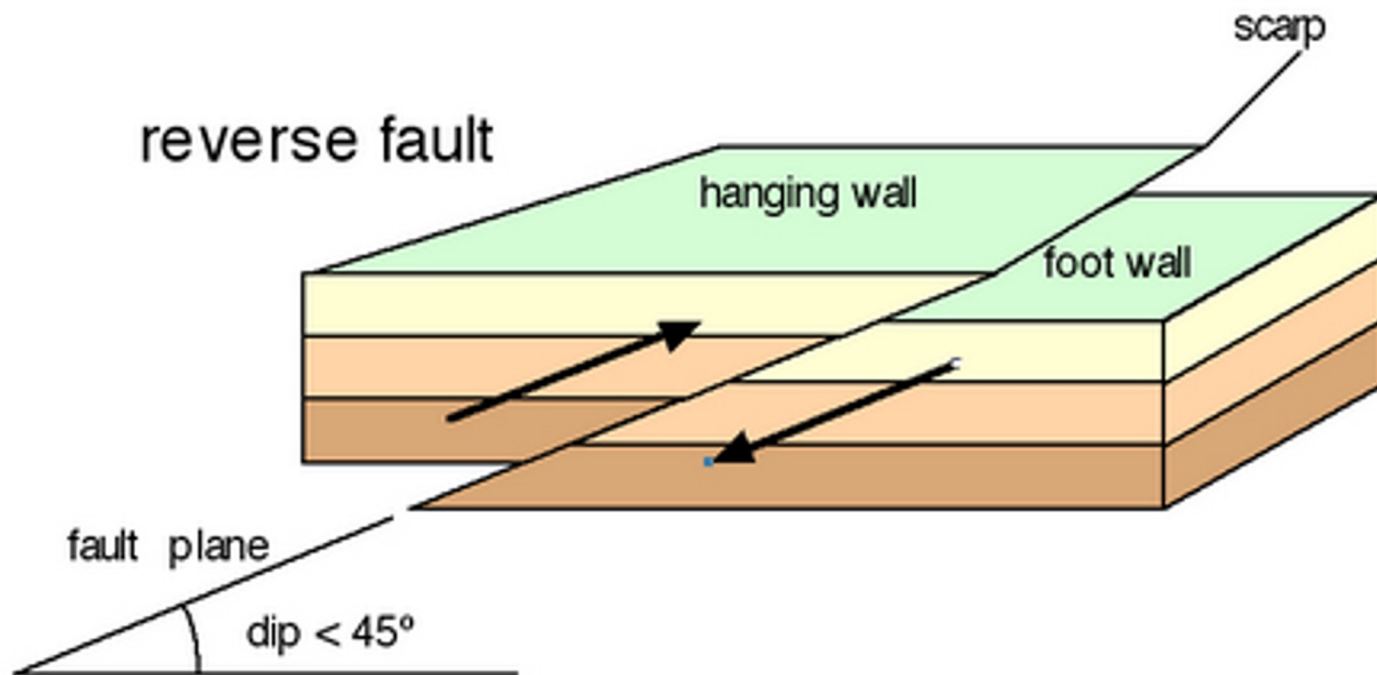
Reverse faults

- The fault in which the hanging wall appears to have moved up with respect to foot wall.



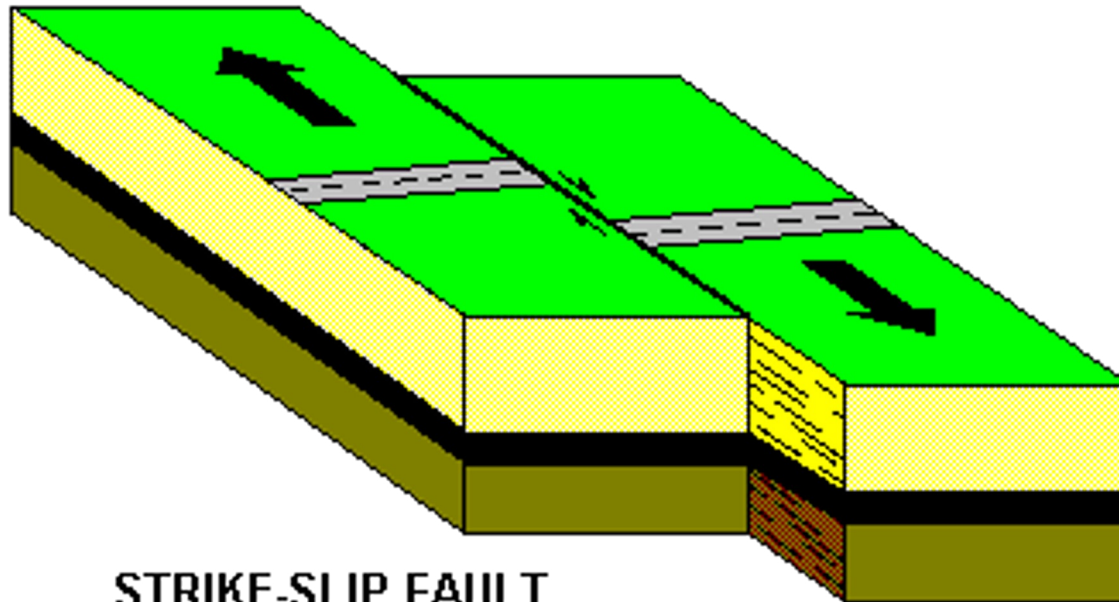
Thrust faults

- It is a reverse fault in which the faults dip at an angle below 45°

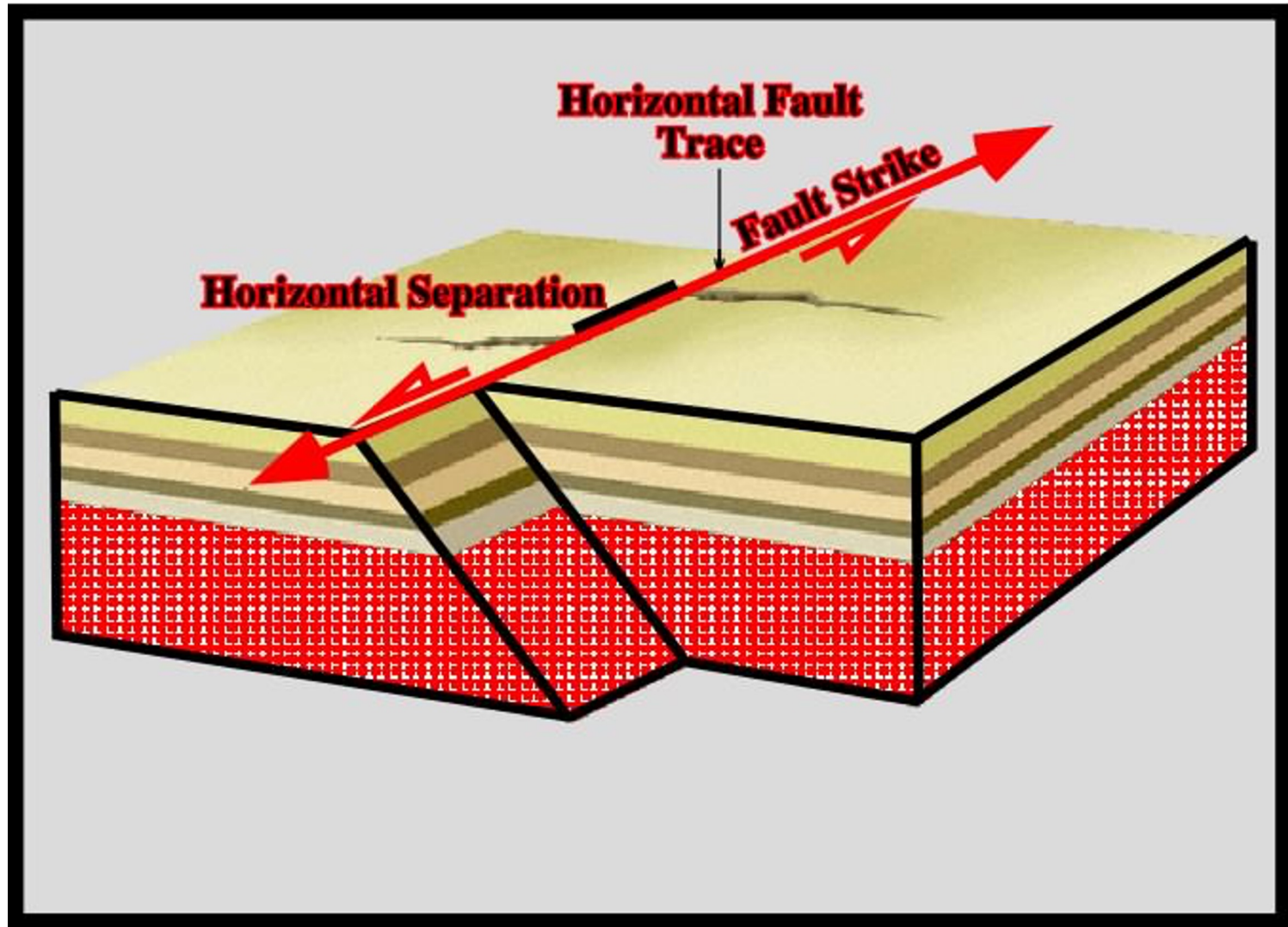


Strike slip faults

- The faults in which **faulted blocks** have been moved against each other in **horizontal direction**

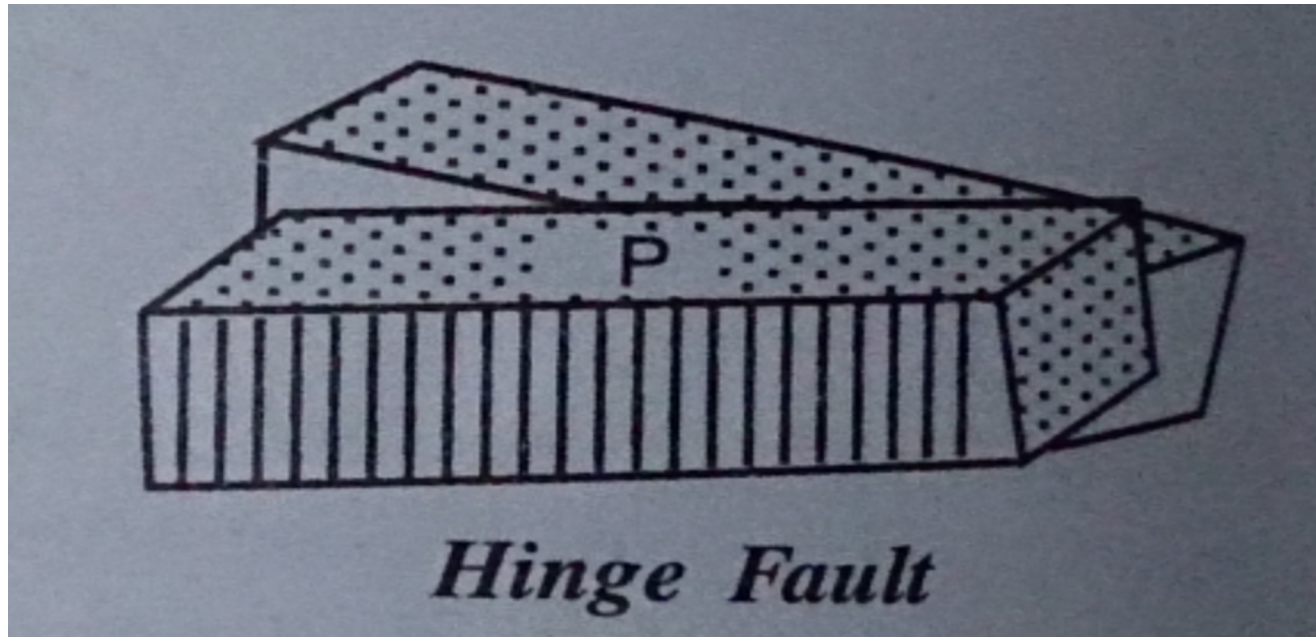


Strike Slip Movement



Hinge faults

- The fault in which the movement of the blocks will be rotational , such faults are called Hinge faults.



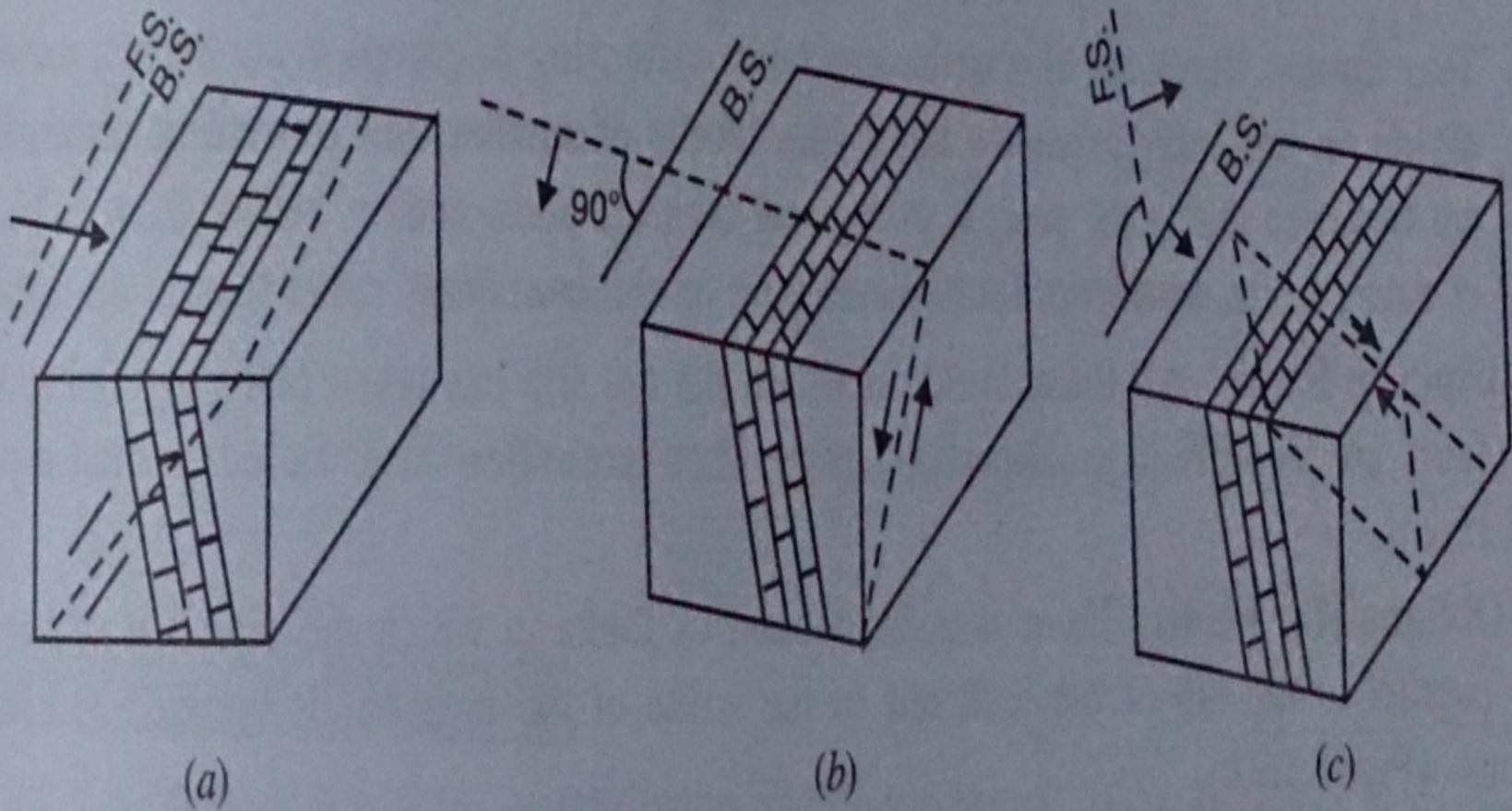
Attitude of fault as basis

- Attitude (dip and strike) of fault and disrupted rock

1.Strike faults

2.Dip faults

3.Oblique faults



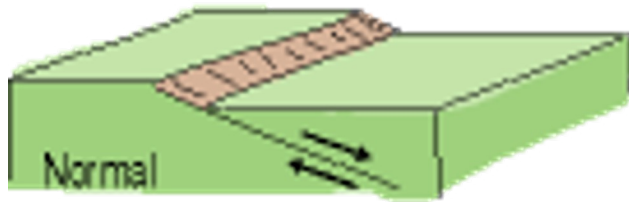
Attitude as Basis

- Strike faults – faults **parallel to the strike** of strata
- Dip faults – faults develop **parallel to dip** of the strata
- Oblique faults – **fault makes an oblique angle** with the strike of rocks

Slip as basis

1. Dip slip – Parallel to the dip of the fault
2. Strike slip – parallel to the strike of the faults
3. Oblique slip – neither parallel to dip nor to the strike

Dip Slip

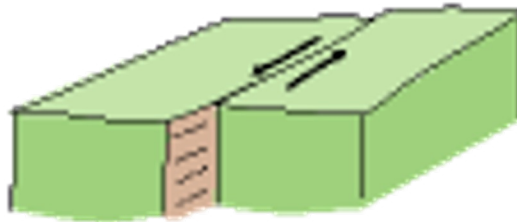


Normal



Reverse

Strike Slip

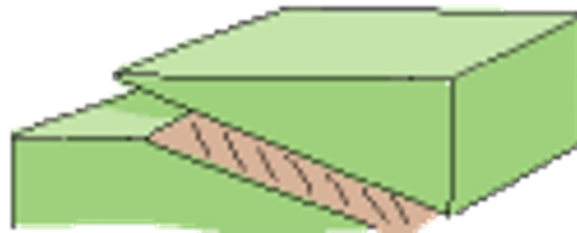


Left-Lateral



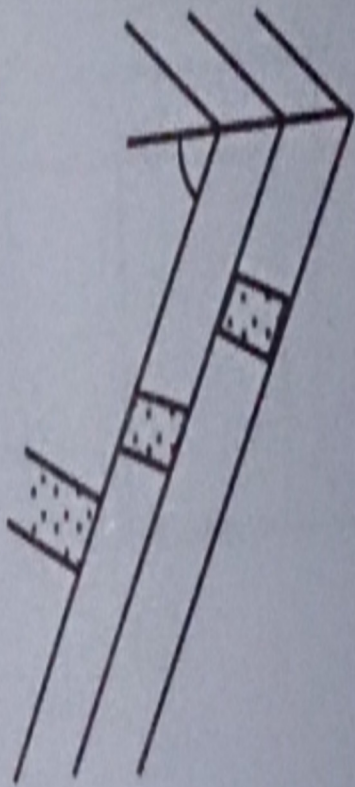
Right-Lateral

Oblique



Mode of occurrence as basis

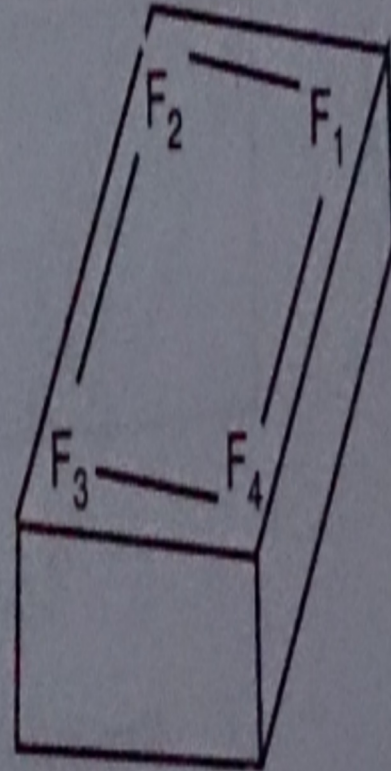
- Parallel faults
- En echelon faults
- Peripheral faults
- Radial faults



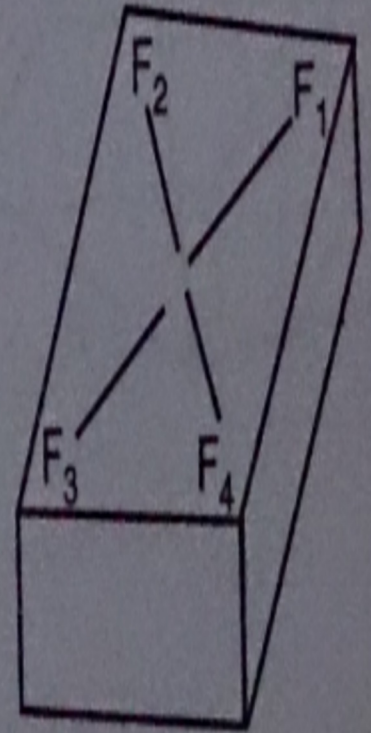
(a)



(b)



(c)



(d)

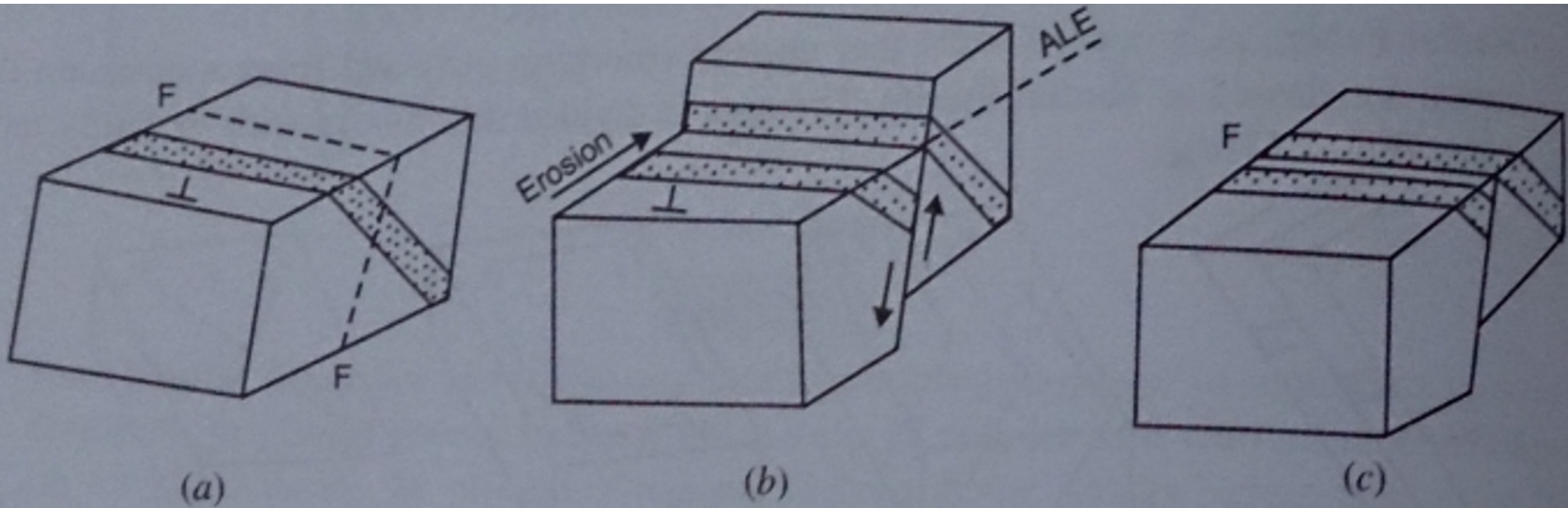
Faults Classified on Mode of Occurrence (See Text)

- **parallel faults** - group of faults occurring in close proximity and parallel to each other
- **Ene chelon faults** – group of small sized faults ,
overlap each other
- **Peripheral faults** – faults along the border or margin of the area
- **Radial faults** – Faults emerging outward from a common central region

Effects of faulting

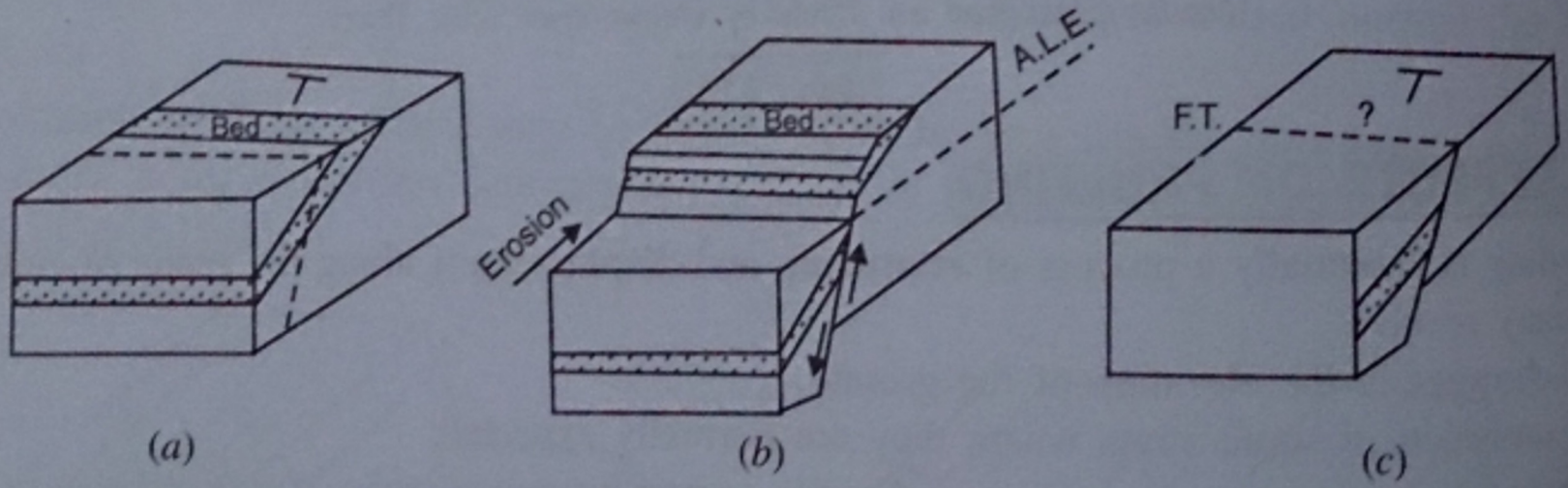
- Changes in elevation of ground
- Omission of some strata
- Repetition of some strata

- Repetition – down throw is against the direction of dip
- Omission – down throw is parallel to the direction of dip



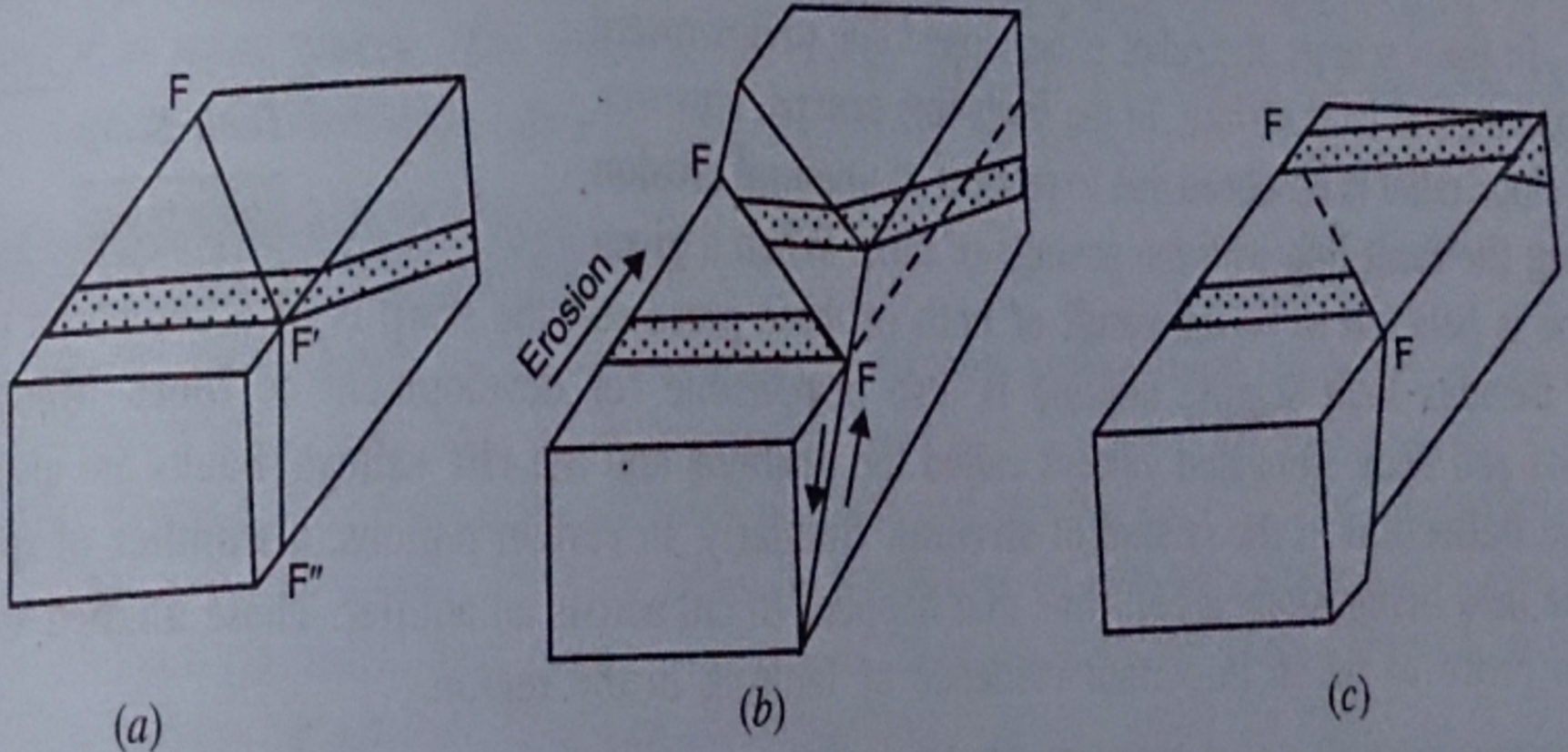
Repetition of Beds

Fig. 7.18.



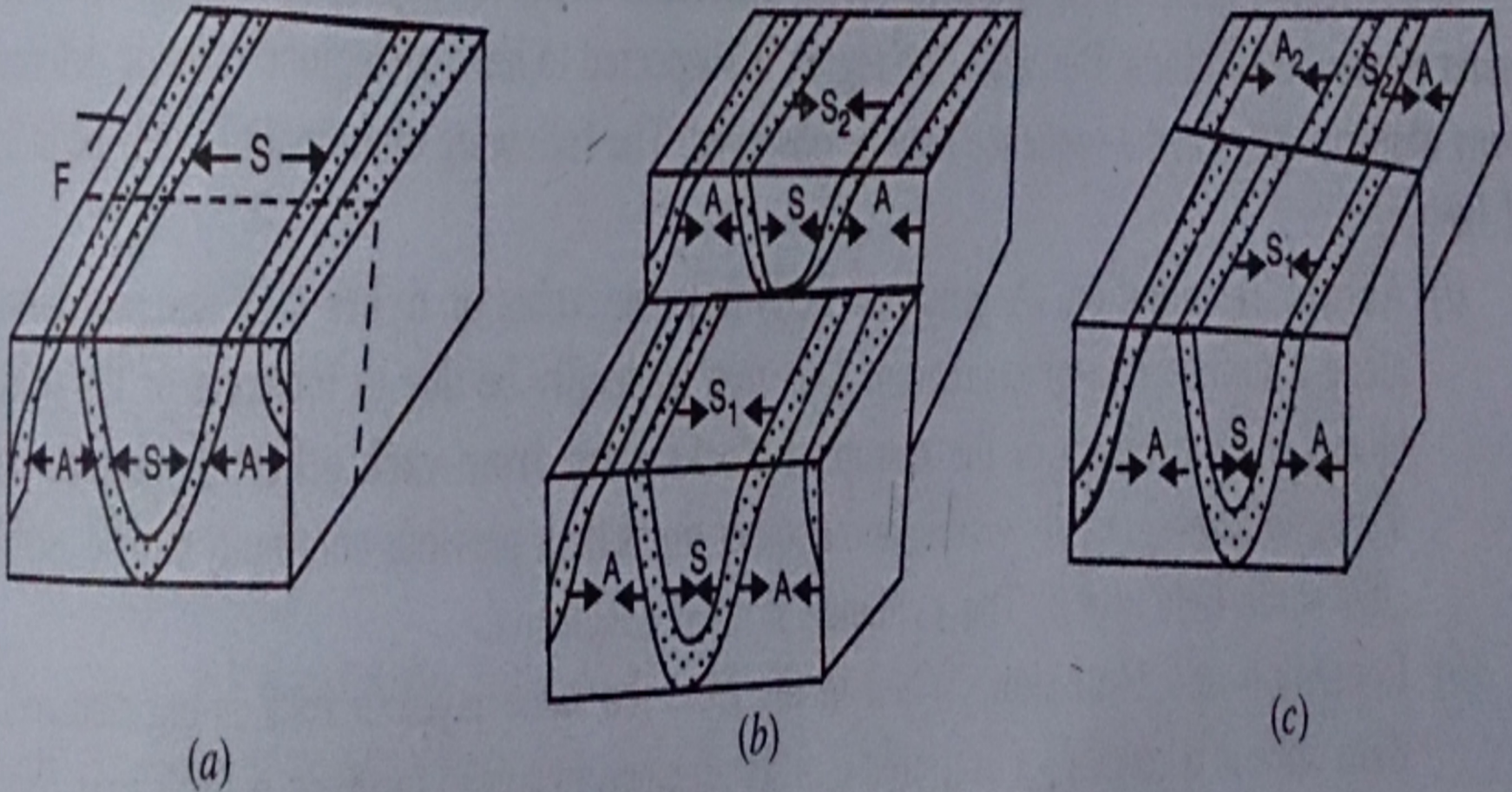
Omission of Beds

Effects of oblique faults (overlap or gap)



Effects of Oblique Faults

Effects on folded rocks



Effects of Faults on Folded Rocks

Fault scarp – Development of steep slopes

