

ENERGY STORAGE - STRESS & STRAIN

FAULTS

ENERGY RELEASE - ELASTIC REBOUND THEORY

STRESS

= F/A , FORCE ^{APPLIED} OVER AN AREA

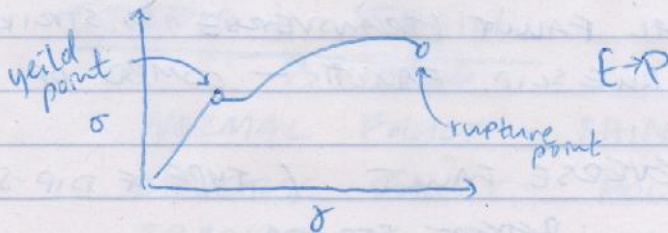
3 STRESS = TENSION, COMPRESSION, SHEAR

STRAIN

= DEFORMATION CAUSED BY STRESSES

- 3 TYPES
- ELASTIC DEFORMATION
 - PLASTIC/DUCTILE DEFORMATION (PERMANENT)
 - BRITTLE STRAIN (ROCKS BREAK) @ yield point

STRESS-STRAIN DIAGRAM



TEMPERATURE

LOW T, HIGH STRAIN

HIGH T, HIGH δ

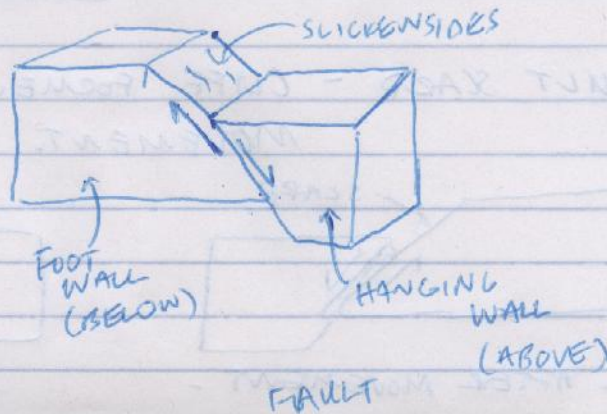
HIGH T, LOW δ

↑
inc. elastic def. before yielding

FAULTS - FRACTURE ALONG WHICH MOVEMENT HAS OCCURRED

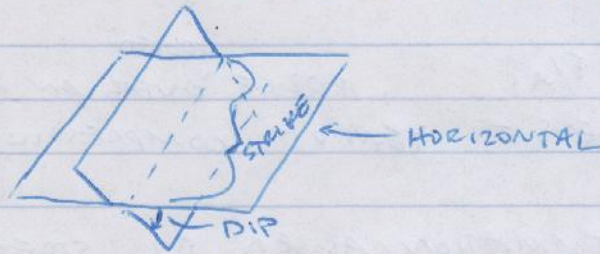
ACTIVE - CRUSTAL DEFORM. EXPECTED TO OCCUR

INACTIVE - NOT SITE OF ACTIVITY



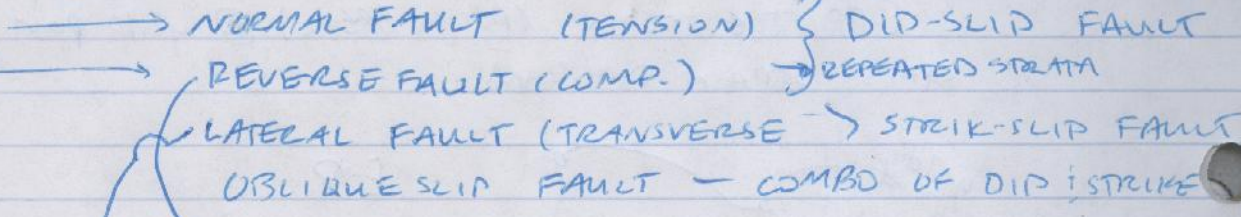
STRIKE + DIP

STRIKE - DIRECTION OF LINE FORMED BY INTERSECTING PLANE
 DIP - MEASUREMENT OF ANGLE OF INCLINATION OF A PLANE.



FAULTS

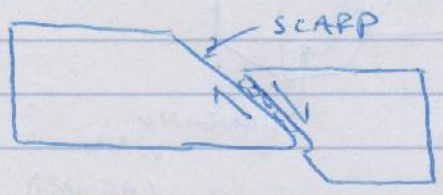
HANGING WALL }
 " " DEEP }
 " " RISE }



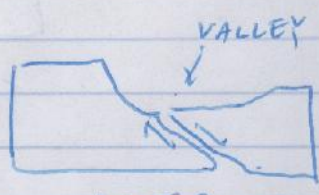
REVERSE FAULT (TYPE OF DIP-SLIP)
 • REPEAT STRATA
 • EX. THRUST FAULT (LOW ANGLE DIP 20-30°)

STRIKE-SLIP FAULTS
 • ROTATIONAL OR SHEAR STRESS
 • RIGHT & LEFT LATERAL
 • DETERMINED BY RELATIVE MOVEMENT OF EACH PLATE LOOKING ACROSS FAULT.

FAULT SCARP - CLIFF FORMED BY TECTONIC MOVEMENT.

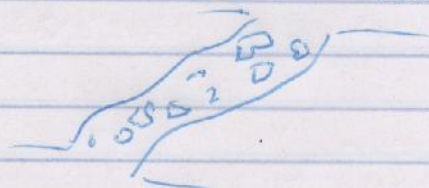


- AFTER MOVEMENT -

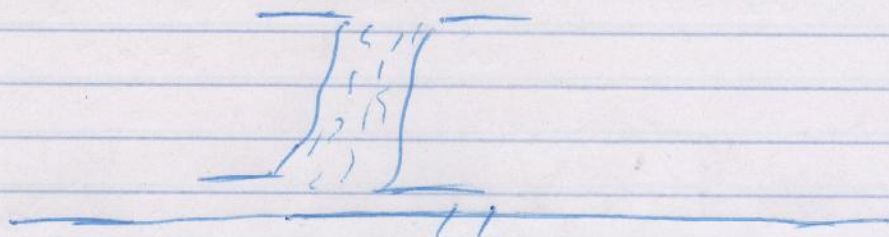


- AFTER EROSION -

FAULT BRECCIA - FAULT FORMED WITH
ANGULAR ROCK FRAGMENT



FAULT GOUGE - INDESCRIBIBLE ROCK
FORMATION IN FAULT



STRESS & STRAIN.

BRITTLE

DUCTILE

NORMAL FAULT - THINNING OF CRUST

REVERSE FAULT - FOLDING OF CRUST

TRANSVERSE FAULT - LATERAL DEFORMATION.

SEISMIC CREEP

- CONSTANT MOVEMENT ON A FAULT.

- ~~CONTINUOUS~~ CONTINUOUS RELEASE OF STRESS.