1. Explain the following terms (40%): (1) Growth fault; (2) Competency; (3) Hydraulic fracturing; (4) Strain hardening & strain softening; (5) Synformal anticline & antiformal syncline; (6) Heave & throw; (7) Reverse fault & thrust fault; (8) Cleavage & schistosity; (9) Boudinage & Mullions; (10) Deviatoric stress & mean stress

2. Draw and explain the combined fracture criteria in Mohr space (Griffith, Coulomb and Von Mises Criteria). What kind of geological structures observed under different confining pressures in combined fracture criteria? (10%)

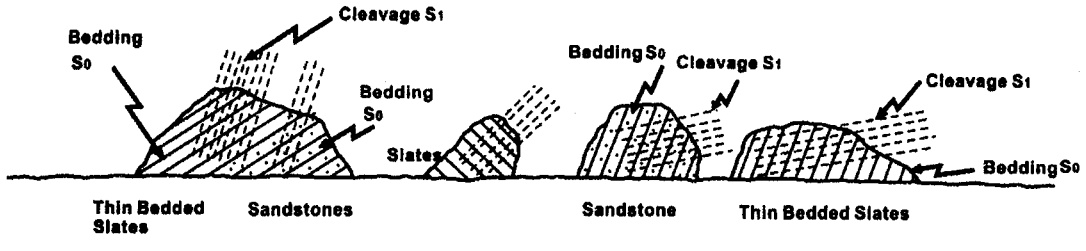
3. Draw and explain the following fault-related folding: Fault-bend folding, fault propagation folding, décollement folding and trishear. (10%)

4. Using power-law creep flow law and creep parameters for lithosphere materials to characterize the rheological profiles. (10%)

5. Drawing and explain the shear sense indicators in a "dextral shear zone" including brittle and ductile structures. (10%)

6. Draw and explain the Anderson's theory of faulting and the corresponding fault plane solution (beach ball) with P (σ_1) and T (σ_3) axes. What are the assumption and limitation of Anderson's theory? (10%)

7. Draw the possible structure connected in 4 isolated outcrops with different lithology with attitudes of bedding and cleavage based on the following cross section in a slate belt. Explain in detail how you connect the isolated outcrop to a structure and what is your assumption. (10%)



試題隨卷繳回