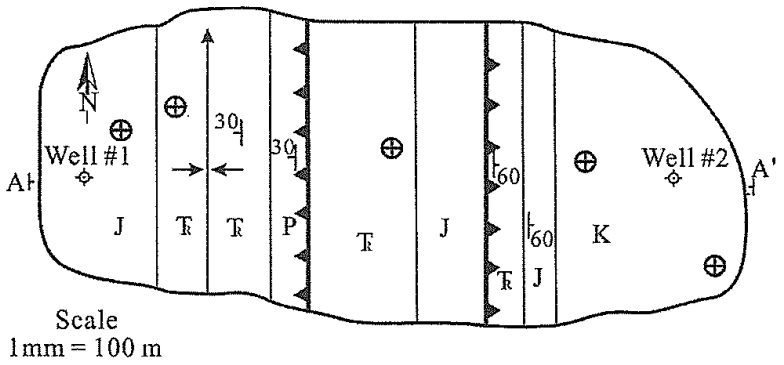
1. Explain the following terms (40%)

(1) Byerlee's law; (2) Anderson's theory; (3) Salient and recess; (4) Lineament and lineation; (5) Paleostress and reduced stress tensor; (6) Stick-slip and stable sliding; (7) Balanced cross section; (8) Deformation band; (9) beta diagram and pi diagram; (10) Dynamic analysis and tectonic analysis

2. Explain how the tensional fractures form in terms of stress variations during uplift (e.g., thermal and Poisson effects). (10%)
3. Explain the arrays of subsidiary structures associated with dextral shear with strain model for the origin of subsidiary structures along a strike-slip fault. (10 %)
4. Explain the kinematic models of folding (flexural slip/flow folding, neutral-surface folding and shear folding) (10%)
5. Why salt diapirs? Explain it in detail in terms of salt properties and rheology. (10 points)
6. Draw and explain the mechanism of the floor-roofed duplex, extensional duplex and strike-slip duplex. (10 points)
7. The following figure contains a geologic map and topographic profile. Two wells have been drilled in the area, as indicated on the map. Well number I encountered a thrust decollement at 1500 m. Well number 2 encountered the following units:

Depth to top of unit (m)	Unit encountered
350	Jurassic rocks below an interval of fault gouge
900	Triassic rocks
1680	Permian rocks
2150	Proterozoic crystalline rocks

Regional mapping indicates that the thickness of Cretaceous rocks is 700 m. Use the map, together with stratigraphic thicknesses from the well log and regional mapping, to construct a cross section on the topographic profile. Be sure to show the eroded layers above the level the present exposure. Determine and draw the type of fold present along AA' by using the topographic profile. (10 points)



試題隨卷繳回