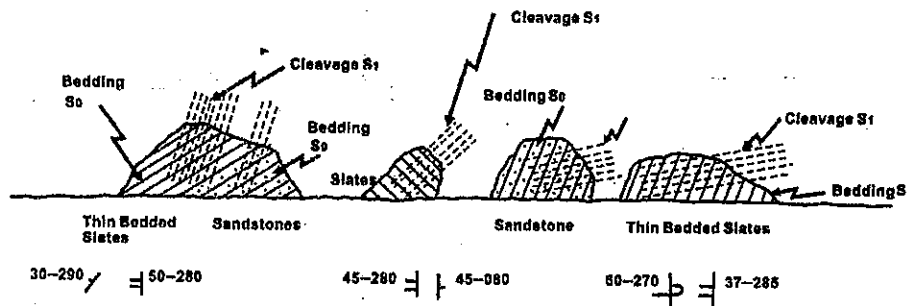
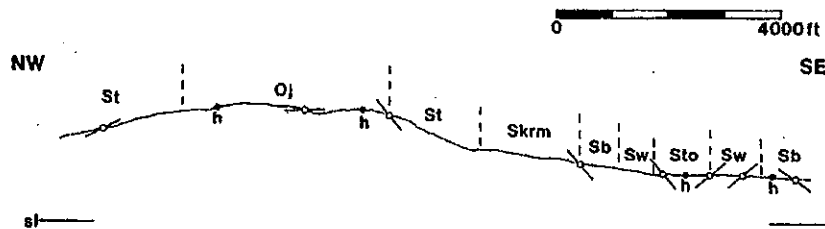


1. Explain the following terms (40%)  
 (1) Thin-skinned and thick-skinned tectonics; (2) Compressional and extensional duplexes; (3) Antiformal syncline & synformal anticline; (4) Synthetic and antithetic fractures; (5) Point defects and diffusion; (6) Homogeneous deformation; (7) Stylolite; (8) Effective confining pressure; (9) Deformation band; (10) Plumose structure
2. Draw and explain the Flinn diagram. (10%)
3. Explain the difference between particulate flow and cataclastic flow in brittle deformation mechanisms. (10%)
4. Draw in contact force model and stress shadow model to explain why joints tend to be evenly spaced. (10%)
5. Explain mechanism of salt diapir in terms of rheology and density inversion (5%). What kinds of structures associated with salt diapir (5%)?
6. What is the geometric relationship between folds and bedding in low-grade metamorphic slate areas? Please use the above-mentioned geometric relationship to draw the possible fold structure based on the following figure. (10%)



7. Dip readings along a line of section across fold in the Millerstown Quadrangle, Pennsylvania Appalachians, USA. Dashed vertical lines separate outcrop belts of different stratigraphic units. Each filled circle (h) marks the intersection between a kink plane and the ground surface; use the following information to complete the cross section. sl = see level; Oj = Ordovician Juniata Formation; St = Silurian Tuscarora Formation; Srkm = Silurian Rose Hill, Keefer, and Mifflintown Formation; Sb = Silurian Bloomsburg Formation; Sw = Silurian Wills Creek Formation; Sto = Silurian Tonoloway Formation. The Ordovician Juniata Formation is about 1500 ft thick and is underlain by the 750-ft-thick Bald Eagle Formation and the 1500-ft-thick Reedsville Formation. (10%)



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