

1. In which soil horizon would you be most likely to find fossils? Give the full name and horizon letter.
2. What are Eolian Processes? What environment do they usually occur in?
3. How is an unprojected map made? What does it distort?
4. What is orthogonal flexure? Name two typical properties of the resultant rock.
5. What is the typical direction is the vergence of a Z-fold, relative to the foliation of the rock ? Give the answer to the nearest compass azimuth (N E S W) or quadrant, with the bearing of the foliation representing 0 degrees).
6. You are standing on a horizontal surface looking NE when you notice an eroded fold plunging N25W and the broadening in width to your left. Is the intrado or extrado of this fold exposed?
7. What is the interlimb angle of a mushroom fold?
8. Which of the following has a (to scale) cross-section most similar to a synclinorium: dome, basin, antiform, synform?
9. What are the three types of magma, by SiO<sub>2</sub> content?
10. What are the three ways that magma is produced?
11. What is a nuee ardente? (hint: it's a geohazard)
12. A low-angle reverse fault is a thrust fault. What is the name for a low-angle normal fault?
13. What is the difference between a generatrix line, hinge line, and crest line?
14. What is the difference between an axial surface, axial plane, and axial trace?
15. Which is typically made up of more competent rocks: Class 1b or 2 folds?
16. What is an imbricate fan?
17. What is volume-loss folding? How does it work?
18. What type of folds are depicted in this folding sequence?

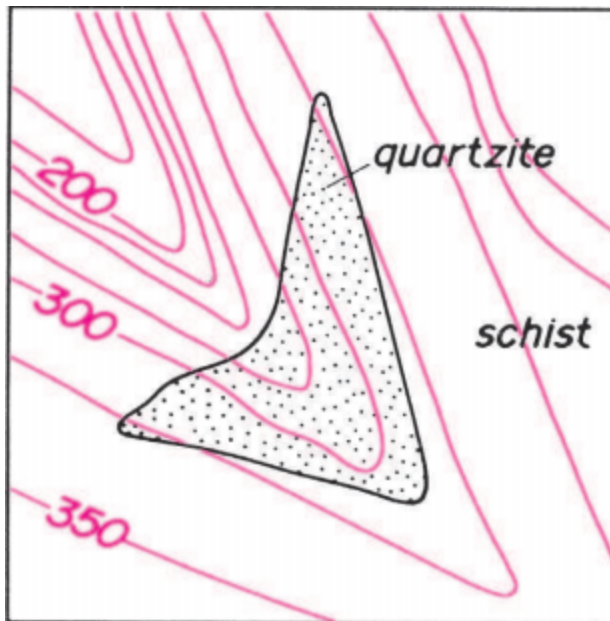


19. What can slickensides tell the field geologist about net slip of faults?
20. Explain what is meant by competence.

21. There are two possible igneous intrusions shown in red in the above picture, one curved-side-up and the other curved-side-down. Give their respective names.
22. The red structures could also be hydrocarbon traps. If so, what type of hydrocarbon trap would they be?
23. What are geoblemes and astroblemes?
24. Name 2 primary igneous and 2 primary sedimentary structures.
25. What feature of thixotropic clay makes it a potential geohazard?
26. Give 2 specific features that indicate the presence of a fault, be as specific as possible! Don't just say displacement of rock.
27. Give a brief magnetic history of the planet Earth.



28. The above image is the map symbol of a geologic structure. What is the structure, and how is it formed?
29. Name the 3 types of ocean sedimentary environments.
30. A coal seam dips  $4/230$ . The mining company wants to have passages with a slope of at least 3.5 degrees to ensure proper drainage. Give the range of possible azimuths for the passages.
31. What is an ophiolite and how are they created?
32. In what geologic structures are ring faults found?
33. An underground passage linking two cave systems follows the line of intersection of the base of a limestone bed and a vertical rock fracture. The bedding in the limestone dips  $060/60$  and the strike of the fracture is  $010$ . What is the plunge of the passage?
34. The map below depicts an outcrop of quartzite. Is there a fold in the image? How do you know? If so, identify it (antiform/synform), and describe the path of the axial trace and hingeline.



35. What is the name of a fault that whose dip decreases with depth?