PREPARATION QUIZZES FOR FIELD TRIPS

These questions are the exactly the same ones that will be on the online quizzes due at 6 am the morning of each field day (however, the order will be different). All information necessary to answer these questions is in the class book. The questions are listed below in the order in which they appear in the book (as you follow the reading assignment below). **NOTE: THESE QUESTIONS WILL NOT APPEAR IN THE SAME ORDER NO THE QUIZZES – ½ WILL APPEAR ON THE FIRST QUIZ – ½ ON THE SECOND.** You should have them all completed before the first quiz. You can come to study halls or office hours for any extra assistance.

READING ASSIGNMENT:

Geology of the San Francisco Bay Region, Pgs. 1-17, 26-35, 48-63, 110-130, 134, 141-155, 180-183

FIGURES OF NOTE: Pg. 12: Plate 1, Pg. 14: Figure 2, Pg. 12: Figure 4, Pg. 30, Figure 9, Pg. 33: Map 4, Pg. 35, Figure 11, Pg. 54: Figure 17, Pgs. 112-115: Maps 11 and 12; Pg. 116, Figure 21, Pg. 119: Figure 23, Pg. 123: Map 13, Pg. 142: Figure 29, Pg. 143: Figure 30, Pg. 144, Figure 31

1. What type(s) of landslides can be found in San Francisco where rocks are resistant to erosion?
2. What type(s) of landslides can be found in San Francisco where rocks are soft and easily eroded?
3. List four agents of **erosion** (processes that remove weathered material and transport it) active in San Francisco.
4. When did Farallon plate subduction start? (And the Franciscan terranes begin accretion)
5. What's the age of the youngest volcanic rock we find in the Sierra Nevada today (remnants of the volcanism associated with the Franciscan Subduction Zone period)?
6. Today, which two plates meet just offshore of San Francisco and what kind of plate boundary is this?
7. When did the San Andreas Fault began its strike-slip motion?
8. Where is the nearest subduction zone to San Francisco and what volcanoes are associated with it?
9. Studying the faults in the Bay Area (Fig 11), describe the topography of the block that sits between the San Andreas and the Hayward faults, and compare it topographically to the blocks east and west of it?
10. What is the age of the Franciscan chert?
11. What makes up the shell material of radiolaria (the main component of the rock called chert)?
12. What other rock type is interlayered and folded in with the chert?
13. How are pillow basalt and greenstone related?
14. The volume of sediment that accumulated in the trenches during Franciscan subduction is enough to cover the state of California with a layer how thick?
15. An important rock of the Franciscan Terranes is not well described in your textbook. It is produced when water at a mid-ocean ridge circulates into the crust, is heated by magma below the surface, and reacts with the solid mantle rock that is closest to the surface at the ocean ridge than anywhere else in the world, due to the pulling apart and thinning of the ocean crust in this region. This rocks is green, low density, and relatively soft. It is also the California State Rock. What is its name?
16. What is the ultimate source of the sand that makes up the old dunes that underlie most of the streets and buildings of San Francisco?

17. List the terranes and mélanges that make up the bedrock under the sand dune cover in San Francisco (list in order from youngest to oldest).
18. What are the major rock types found in the San Bruno Mountain and Alcatraz Terranes? And what was their ultimate source?
19. What was the rock at Telegraph Hill used for during the gold rush?
20. What are the major rock types found in the Marin Headlands terrane?
21. What are the major rock types found in the Hunter's Point and City College Melanges?
22. Why are the rocks of the Colma and Merced formations geologically important?
23. What is the age of the Colma Formation and where can it be found in San Francisco?
24. During ice ages, what does San Francisco Bay look like and what types of sediments deposit here?
25. During ice ages, what does the coastline look like and what types of sediments deposit there?
26. During interglacials (like today), what types of sediments deposit in San Francisco Bay?
27. The average depth of San Francisco Bay is only 18 feet. The deepest part is under the Golden Gate Bridge. How deep is that spot and what carved it?
28. How old is the Bay Fill that extends San Francisco's shoreline?
29. What percentage of San Francisco Bay wetlands have been filled in for land expansion and building?
30. If you want to find resistant, solid, stable bedrock in San Francisco or San Francisco Bay, what kind of features should you look for?