Colorado Plateaus, Black Canyon, Grand Canyon, Zion, Rainbow Bridge, Natural Bridges, Arches, Bryce

1) Because of (1), the Gunnison River was pushed to its present location. Much later, the river cut downward and was lowered onto the resistant rocks of Black Canyon that date from the (2) Era. Such a process is called (3).

2) The name of the spectacular rock unit at Zion Canyon National Park is the (4). The vertical walls at Zion are partially maintained by slight expansion of the rock walls towards the open canyon. This process is known as (5).

3) Mineral stains on rocks in the Colorado Plateaus like those at Rainbow Bridge are called (6).

Slide #1:

7-8) Sketch this view in the western Grand Canyon (Tuweep, Toroweap area) and indicate in approximate years the age of the two major rock units exposed here.

Slide #2:

9-12) Sketch this view that looks across the Grand Canyon and up Bright Angel Creek, and carefully indicate where (1) rocks of Paleozoic age are located, (2) rocks of Precambrian age are located, (3) a prominent unconformity is located, and (4) where the Kaibab Limestone is located.

EXTRA CREDIT: Label the lower Cambrian age Taplats sandstone in your sketch.

Slide #3:

13) This special type of sedimentary bedding is called (13).

14) What caused the inclination of some of the layers to consistently slope to the left?

Slide #4:

15) The combination of three major factors including (15), (16), and (17) account for this complex topography.

16) EXTRA CREDIT: Explain the cause of the different rock colors.
Slide #5:

18) ___________________________  This landform is a natural ___(18)___ . What is the reasoning for your answer?

Slide #6:

19) ___________________________  The rock features protruding upwards are called ___(19)___ . These features form here because of a buried layer of rock called ___(20)___ .

EXTRA CREDIT: Describe the processes that allow these features to form in straight lines. What controls where the valleys form between the ridges?

21-23)  Distinguish between a plateau, mesa, and butte. A sketch would help.

24)  Sketch a cross section of a monocline.

25-26)  What is an entrenched meander? How does it help explain Rainbow Bridge?

27-28)  Sketch a “youthful,” “mature,” and “old age” natural bridges.

29-33)  What is the “grand staircase”? Where do the Colorado Plateau parks that we studied fit into the scheme? A sketch will be useful.