USGS

Rocky Mountain Mapping Center

Volcano and Hurricane Activity from USGS Rocky Mountain Mapping Center

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Examine the USGS Mt St Helens and Vicinity map.

1) What primary direction from the crater did the 1980 eruption of Mt St Helens directly impact? Circle your answer. (2 points)

North East South West

2) How large is the eruption impact area? Indicate the units. (4 points)

3) Describe 3 things that happened in the eruption impact area. (6 points)

4) What direction did the landslide and debris flow move from the crater?

Circle your answer. (3 points)

Northeast Northwest Southeast Southwest

5) Examine the pattern of mud flow. What is the direction of mud flow from the crater?

Circle your answer. (3 points)

North and East West and Southeast North and Southwest

6) Why did the mud flow where it did? (5 points)

7) What frozen features existed along the flanks of Mt St Helens, particularly on its east side? (4 points)

8) Do you think these features existed before the eruption, after the eruption, or both?

Circle your answer. (4 points)

Before the eruption After the eruption Both

9) Explain your answer. (6 points)

10) What is the elevation of the highest point on the south rim of the crater? Indicate the units of elevation. (3 points)

11) Is this elevation higher or lower than before the volcano erupted? (3 points)

Higher Lower

12) Why? (6 points)

13) Name 2 ways that people died as a result of the eruption of Mt St Helens. (6 points)

14) Throughout most of the western United States, winds normally come from the west. The day of the first eruption of Mt St Helens was a normal weather day. Therefore, what is true about the ash from Mt St Helens blow? Circle your answer. (2 points)

It primarily covered the Gifford-Pinchot National Forest

It primarily covered Longview and the Columbia River.

It primarily covered the Snoqualmie National Forest.

15) Examine the photograph of Yakima, Washington on the map. Based on your previous answer, what direction is Yakima from Mt St Helens? (2 points)

North East South West

16) Still examining the same photograph, name two hazards that can result from volcanic ash. (4 points)

17) Examine the two types of rock in the front of the room where you are taking this test. Both are volcanic rocks. Pumice is filled with air holes left from escaping gas and is thrown from the crater. Lava is more dense because of the minerals contained in it and because of the lack of air holes. Lava flows from the crater; it is not thrown from the crater. Which of the rocks is pumice? Circle your answer. (2 points)

The dark-colored rock The light-colored rock

18) Which rock would you expect to find farther from this crater? (2 points)

pumice lava

19) Why? (4 points)

Earth Processes

Examine map HA-629: "Hurricane Frederic Tidal Floods of September 12-13, 1979, Along the Gulf Coast, Hurricane Quadrangle, Alabama." This shows the intensity of flooding at
the northern end of Mobile Bay from the storm tide associated with the hurricane.

20) How long did the hurricane take to move from Puerto Rico to the area depicted on this map? (2 points)

21) How fast did the hurricane move per day? (3 points)

22) What percentage of the land in Hurricane Quadrangle was covered by the flood caused by the hurricane? (2 points)

23) Did the flood cover the Louisville and Nashville railroad? (2 points)

24) Before Hurricane Frederic, how many years had it been since a flood of this magnitude occurred in Mobile Bay? (3 points)

_____ years

25) What is the probability that a flood with the same magnitude as Hurricane Frederic will occur in any given year? (3 points)

_____ %

26) During which year would you expect another flood with the same magnitude in Mobile Bay? (3 points)

27) What would be the high-water mark for a storm tide to reach the lowest point in the Civil War Trenches? (3 points)

28) What would be the probability of such a flood? (3 points)

29) Was the high-water mark higher at Steam Mill Landing or Sizemore Landing? Circle Your answer. (1 point)

Steam Mill Landing Sizemore Landing

30) Why? (4 points)

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