

**Round: 8A**

1. Provide three (3) natural processes and one (1) human-controlled process that affect the rate of shoreline erosion.

*Natural—any three (3) of the following (1 pt each, 3 pts total):*

- wave energy
- sediment type
- current strength OR direction
- wind intensity
- storm intensity OR frequency
- shoreline slope
- shoreline complexity
- subsidence
- rising sea level

*Human-controlled—accept any one (1) of the following (1 pt total):*

- shoreline alteration
- importing sediment
- urban development
- boat traffic
- damming a river

2. Find the Hawaiian Islands in Figure 1. What natural process(es) are causing the north side of Oahu to erode while the south side remains relatively stable?

*Prevailing winds and waves (2 pts) are coming from the north to the south (2 pts), eroding the unprotected north side (2 pts). The south side is protected from these processes.*

3. You are a real estate developer in New Jersey and you plan to put in a jetty to protect your marina. Are you likely to be sued by coastal communities in Delaware and why?

*Yes (2 pt), because the jetty would trap sand and starve the beaches in Delaware (2 pt).*

4. On the diagram below, mark where sand would a) erode and b) accumulate given the direction of longshore transport and a flat seafloor offshore.

- 3 points for correct area of erosion
- 3 points for correct area of accumulation.

