Round: 9B

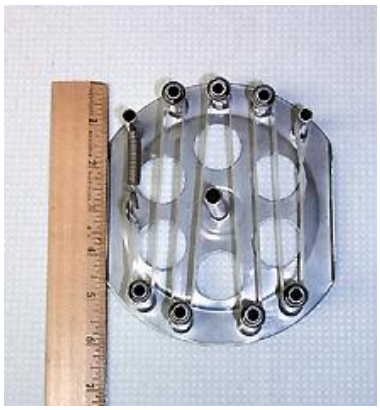

Figure 1: SMPDs wrapped around pegs of a steel plate

Figure 2: Canister of 5 stacked SMPDs

These are images of a semipermeable membrane device (SMPD) used to determine the status and trends of contaminants in coastal areas. SMPDs are made of a polyethylene membrane with a thin film of triolein (a lipid). Data from SMPDs can assist natural resource managers in making informed decisions and developing strategies to minimize water pollution.

1. Is the SMPD an active or passive sampling device? (3 pts)

2. What type of contaminants does a SMPD measure? Give two (2) examples. (3 pts)

3. What are three (3) potential sources of these contaminants? (3 pts)

4. SMPDs were designed to mimic aquatic organisms that concentrate contaminants in their bodies. What is this concentration of contaminants called? Give an example of one (1) organism that exhibits this process. (3 pts)

5. List four (4) advantages to using the SMPD instead of aquatic organisms. (8 pts)