Round: 12A

Four properties of ocean water change dramatically with depth. And, these depth profiles show different patterns in different ocean basins and at different latitudes. (2 points each)

1. Figure 1 shows water density vs. depth at different latitudes. Label in the provided circles in Figure 1 the letter for the profile that indicates the correct characteristics for each of the following: (6 pts)
   a. E for Equator
   b. T for Tropics
   c. H for High latitude

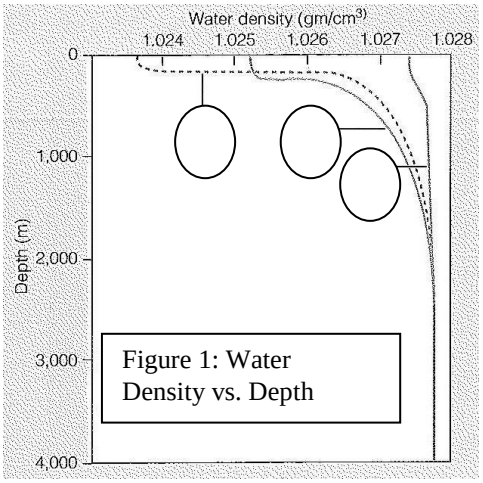

Figure 1: Water Density vs. Depth

2. Figure 2 shows dissolved oxygen vs. depth at different latitudes. The average depth of each basin is identified. (6 pts)
   a. For each latitude, identify the profile representative of the correct ocean basin in the boxes provided:
      A for Atlantic
      P for Pacific
   b. Explain your reasoning for your labels.

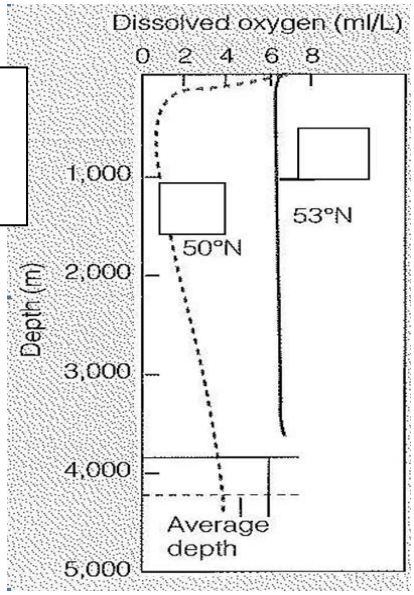

Figure 2: Dissolved Oxygen vs. Depth

3. In Figure 3, there are profiles of temperature vs. depth for two different latitudes. Place the correct label for each of the following on the triangles provided in the graph. (2 pts)
   L for Low latitudes
   H for High latitudes

4. Figure 4 plots dissolved CO_2, carbonate and bicarbonate with depth. The average depths and CCD depths of each basin are provided. (6 pts)
   a. Place the correct label for each of the following in the pentagon provided:
      A for Atlantic
      P for Pacific
   b. Why are carbonate sediments rarely observed in the deep ocean?

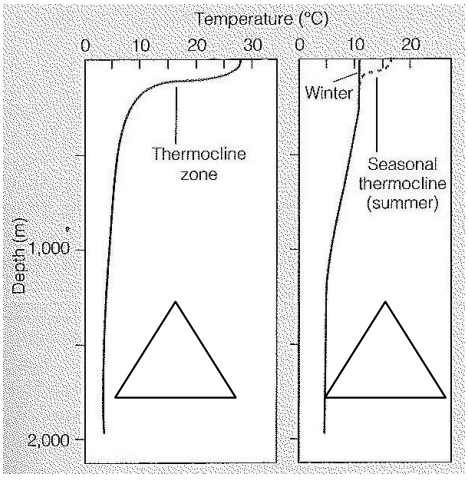

Figure 3: Temperature vs. Depth

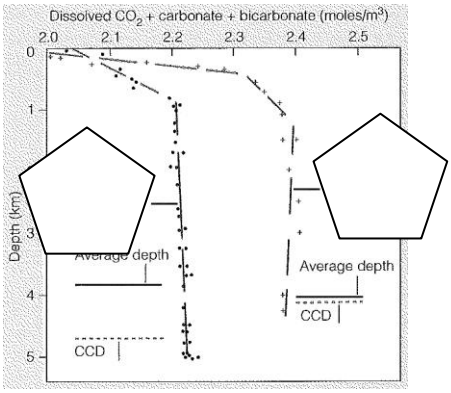

Figure 4: Dissolved CO_2 + Carbonate + Bicarbonate vs. Depth