

Oceanography

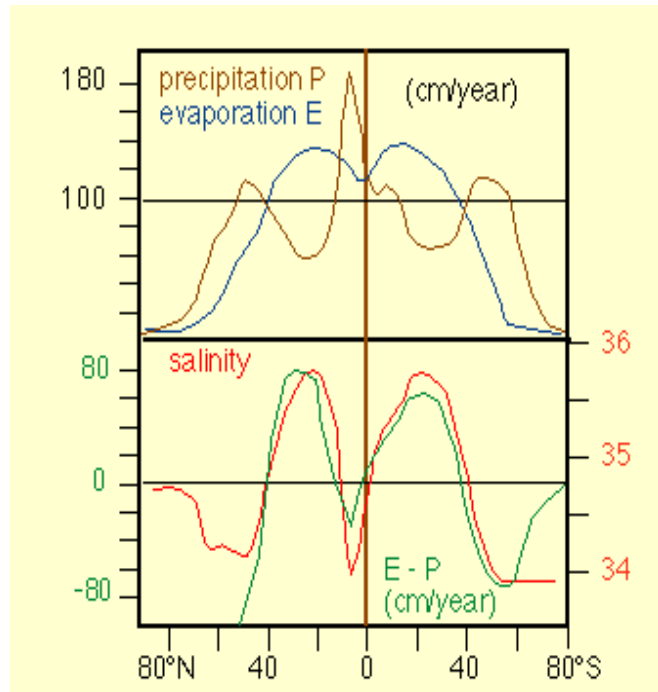
For the following questions please choose the best of the possible answers.

1. What causes ocean layering? (10pt)
 - a. Polar ice caps
 - b. Currents
 - c. Density differences
 - d. Waves
 - e. Evaporation and precipitation

2. The oceans can absorb a large amount of solar energy without significant increases in temperature. This is primarily because (10 pt)
 - a. there is a huge volume of sea water.
 - b. the evaporation latent heat of water is relatively small.
 - c. the sea surface does not reflect the incoming heat.
 - d. the Heat capacity of sea water is relatively high
 - e. the large amount of salt in sea water.

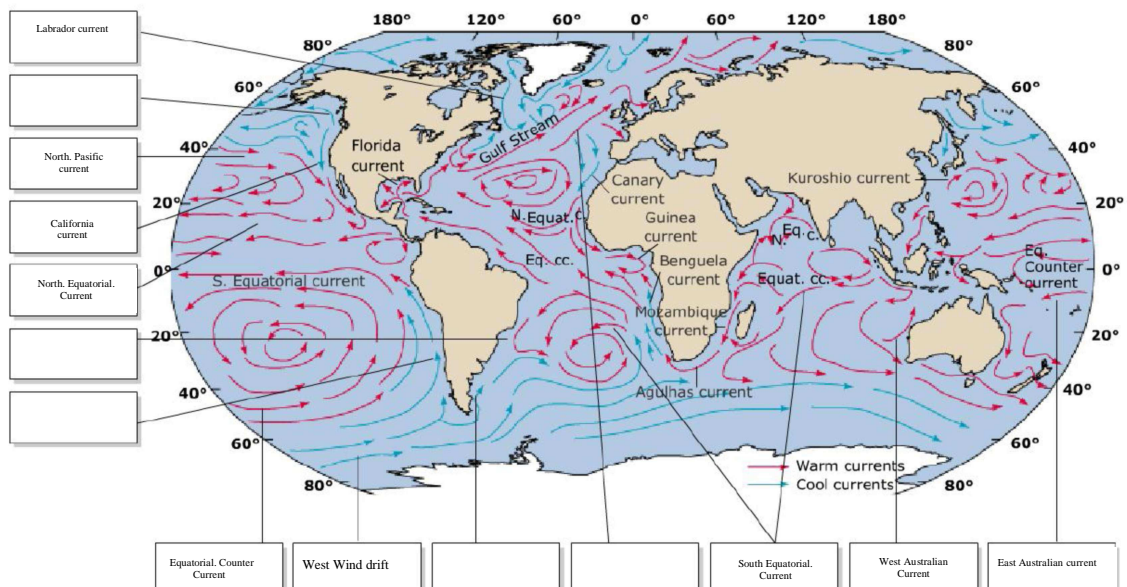
3. Which is the best statement about concentration of O₂ in the seawater? (10 pnt)
 - a. The concentration of O₂ in the surface layer is higher than in deeper layers.
 - b. The concentration of O₂ during winter is higher than during the summer.
 - c. The concentration of O₂ in the high latitude areas is higher than in tropical areas.
 - d. Answer (a) and (b) are correct.
 - e. Answer (a),(b), and (c) are correct.

4. The ocean budget depends on evaporation and precipitation. These effects influence surface salinity. Based on this figure, explain why salinity in tropical waters is lower than sub tropical waters. (20pnt)



5. Match the corresponding currents listed below by letter to the correct location on the following map. (20 pnt)

(A)	Alaska current
(B)	Peru current
(C)	North Atlantic current
(D)	Brazil current
(E)	Falkland current



6. Recently it has been discovered that floating trash is concentrating in specific areas of the oceans. These areas are located in the gyres or areas of circulating currents. (See map above #55) The plastic trash is estimated to remain concentrated in these areas for many hundreds of years into the future before it breaks down photo-chemically. One gyre has an "Island of trash" twice the size of the state of Texas.

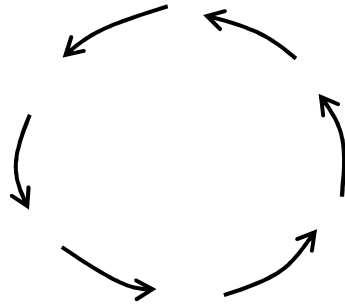
The picture below is a sketch of a gyre.

1) Where is this type of the gyre found?

A) in the Northern Hemisphere, or

B) in the Southern Hemisphere of the Earth.

(Answer: A or B). (10 pnt)



- 2) According to the circle diagram above, complete the following sketch of water mass profile movement across the centre of the gyre. Show vertical motion of the water (if any). (20 pnt)

