

1. Describe the relationships among the wind, the surface current it creates and the development of equatorial and coastal upwellings. (15 分)
2. Describe the three types of plate boundaries. What processes take place at each type of boundary? In what direction do the plates move at each boundary? (15 分)
3. Compare the biological productivity of polar, temperate, and tropical regions of the oceans. Include a discussion of seasonal variables, thermal stratification of the water column, and the availability of nutrients and solar radiation. (15 分)
4. What is a relict sediment? Where would you be likely to find such a deposit, and why would you find it in that place? (15 分)
5. How does the density of sea water vary with changes in pressure? Temperature? Salinity? Why does the potential temperature of a sample differ from the *in situ* temperature? Which would be higher, and why? (15 分)
6. Explain the following terms:
 - (a) Thermohaline circulation (5 分)
 - (b) Oligotrophic (5 分)
 - (c) Divergent plate boundary (5 分)
 - (d) Submarine canyons (5 分)
 - (e) Benthic nepheloid layer (5 分)