

## CH-12 WATER (OCEANS)

### List the divisions of ocean floor.

The ocean floors can be divided into four major divisions: (i) the Continental Shelf; (ii) the Continental Slope; (iii) the Deep Sea Plain; (iv) the Oceanic Deeps. Besides, these divisions there are also major and minor relief features in the ocean floors like ridges, hills, sea mounts, guyots, trenches, canyons, etc.

### State important features of Continental Shelf

- The continental shelf is the extended margin of each continent
- It is the shallowest part of the ocean.
- The width of the continental shelves vary from one ocean to another. The average width of continental shelves is about 80 km.
- They are covered with sediments brought down by rivers, become the source of fossil fuels.

### Highlight important features of Deep Sea Plain

- They are the flattest and smoothest regions of the ocean.
- The depths vary between 3,000 and 6,000m.
- These plains are covered with fine-grained sediments like clay and silt.

### Highlight the important features of Oceanic Deeps or Trenches

- These areas are the deepest parts of the oceans.
- The trenches are relatively steep sided, narrow basins.
- They are some 3-5 km deeper than the surrounding ocean floor.
- They occur at the bases of continental slopes and along island arcs and are associated with active volcanoes and strong earthquakes.

### Explain the factors affecting the distribution of temperature of ocean water

- (i) Latitude: the temperature of surface water decreases from the equator towards the poles because the amount of insolation decreases poleward.
- (ii) Unequal distribution of land and water: the oceans in the northern hemisphere receive more heat due to their contact with larger extent of land than the oceans in the southern hemisphere.
- (iii) Prevailing wind: the winds blowing from the land towards the oceans drive warm surface water away from the coast resulting in the upwelling of cold water from below. Contrary to this, the onshore winds pile up warm water near the coast and this raises the temperature.
- (iv) Ocean currents: warm ocean currents raise the temperature in cold areas while the cold currents decrease the temperature in warm ocean areas.
- (v) The enclosed seas record relatively different temperature than the open seas.

### Explain the factors affecting ocean salinity.

- (i) The salinity of water in the surface layer of oceans depend mainly on evaporation and precipitation.
- (ii) Surface salinity is greatly influenced in coastal regions by the fresh water flow from rivers, and in polar regions by the processes of freezing and thawing of ice.
- (iii) Wind, also influences salinity of an area by transferring water to other areas.
- (iv) The ocean currents contribute to the salinity variations. Salinity, temperature and density of water are interrelated. Hence, any change in the temperature or density influences the salinity of water in an area.