Question: Distinguish between Weather and climate.

**Answer: Weather and Climate:**

**Weather**

**Climate**

**1.** It is the general atmospheric condition of a day.

**1.**It is the sum total of weather conditions and variations over a long period of time (30 years or more)

**2.** It can change every day.

**2.**It does not usually change much.

**3.** It is the average record of atmospheric temperature, atmospheric pressure and rainfall over a small area on a daily basis.

**3.** It is the aggregate of atmospheric temperature, atmospheric pressure and rainfall over a large area over 30 years or more.

**4.** Described as hot, cold, sunny, cloudy, windy, dry, wet etc.

**4.**Described as equable, extreme, tropical, temperate etc.

Question: Distinguish between Heat and Temperature, Convection and Advection and Latitude and Altitude

**Answer: Heat and Temperature**

**Heat**

**Temperature**

**1.** Heat is the form of energy.

**1.**The hotness and the coldness of a substance is called temperature.

**Convection and Advection**

**Convection**

**Advection**

**1.**The transfer of heat through the movement of rising up of warm air and sinking of cold air is called convection.

**1.**It is the transfer of heat from one region to the other.

**2.** Massive convection currents are formed over the Earth, which transfer heat from the earth to the upper parts of the atmosphere.

**2.** Advection usually involves the large scale horizontal transfer of energy. For example- when cold polar winds mix with and cool the warmer air of the tropic.

**Latitude and Altitude**

**Latitude**

**Altitude**

**1.** Latitude is the distance, measured in degrees, minutes and seconds, north and south from the Equator.

**1. Altitude** is the distance, measured in feet or meters, above (or, in rare instances, below) mean sea level

**2.**Lower the latitude higher is the temperature.

**2.** Temperature decreases with increase in altitude.

Question: Describe the general distribution of salinity in oceans.

**Answer:** The distribution of salinity in oceans is as follows:

1. Ocean water is saline due to the presence of a large amount of dissolved salts, mostly sodium chloride or common salt.
2. The amount of salinity varies from one part of the ocean to another.
3. In general, salinity decreases towards the equator due to heavy rainfall.
4. The dead sea in Asia has the highest salinity.

Question: Name the main currents of Pacific Ocean.

**Answer:** The main currents of Pacific Ocean are-  
A. **In the northern hemisphere**

1. North equatorial current (warm)
2. Japan (Kuroshio) current (warm)
3. North Pacific current (warm)
4. California current (warm)

B. **In the southern hemisphere**

1. South equatorial current (warm)
2. East Australian current (warm)
3. West wind drift (cold)
4. Peru current (cold)

Question: What is a tsunami? How does it affect life in coastal areas?

**Answer:**

1. A tsunami is a huge oceanic wave of about 20-30 m in height. It is generated when large mass of water is displaced due to an undersea earthquake or volcanic eruption.
2. The fast moving waves can crush houses and other structures in the coastal areas. Large objects such as ships can be pushed several kilometers inland. Most of the deaths caused by a tsunami are due to drowning.

Question: What are the causes for the occurrence of tides and currents?

Answer: The causes for the occurrence of tides and currents are:

1. The gravitational pull of the moon and the sun on the surface of earth cause tides. Actually tides follow the apparent movement of the moon due to its closeness to the earth. Tides are of two types – high tides and low tides.
2. Ocean currents develop due to the:
   1. Variation in the temperature of ocean water.
   2. Variation in the density of ocean water.
   3. Direction of prevailing winds.
   4. Rotation of the earth.
   5. Shape and position of the coast.

Question: What do you know about the importance of tides?

**Answer:**Following are the importance of tides:

1. Tides make some rivers navigable for ocean-going vessels. During high tide, the depth of water at the mouth of some rivers increases. This help the ships to reach the ports located on those rivers.
2. Tides help to clear the sediments deposited by rivers on their beds and thus prevents siltation of harbours.
3. During high tide, the saline sea water is stored in low lying coastal areas. This saline water is spread out in the fields and used to make common salt.
4. The fishing industry is helped by the rhythm of tides. During high tide, fish come near the coast. The fishermen mostly sail out to the open sea during low tides and return to the coast with high tides.
5. The energy of the tides is used to generate electricity tidal power stations have been set up in UK, Canada, France and Japan.