

CLASS - XII GEOGRAPHY

1. Mention the ideal conditions of formation of artesian wells.

Ans. Artesian well is a kind of deep artificial well. This type of well gets its name from **Artois** in France where it was first dug in 1126 AD.

Ideal conditions of formation of artesian wells :

- i. The presence of a synclinal permeable rock stratum between two synclinal impermeable rock strata is the most important factor.
- ii. Piezometric level must be much above the well's level.
- iii. The two ends of the permeable water bearing synclinal rock beds must be open in adequate rainfall region.

2. Classify springs on the basis of temperature with suitable examples.

Ans: A spring is a natural discharge point of subterranean water at the surface of the ground. Springs may be classified thermally as:

- i. **Cold springs:** Springs that discharge water with temperatures lower than or same as normal body temperature is referred to as cold springs. Generally spring water tends to be warm because of higher temperature beneath the crust. But if the springs are large, the spring water also will be cold because the volume of water is too great to be adequately warmed. Sahasradhara in Uttarakhand, India is an ideal example.
- ii. **Hot springs:** Hot springs are springs with water at temperatures substantially higher than the air temperature of the surrounding region. Most hot springs discharge groundwater that is heated by shallow intrusions of magma in volcanic areas. In some, the groundwater is heated by the naturally high temperature beneath the crust. Hot Springs may be classified as:
 - a. **Quiescent or calm spring**, e.g. Gaurikund in Uttarakhand, India.
 - b. **Sulphurous spring**, e.g. Manikaran in Himachal Pradesh, India.
 - c. **Vigorously boiling spring**, e.g. Bakreshwar in West Bengal, India.
 - d. **Intermittent or pulsating spring**, e.g. Hveravellir in Iceland.
- iii. **Geysers:** A geyser is essentially a hot spring. It refers to a reservoir of hot water that sporadically ejects its contents in a fountain-like manner due to the pressure of underlying gases. Geysers may be further classified as:
 - a. **Pool geysers:** When the geyser is not erupting, it just looks like a pool of hot water, e.g. Great Geysir in Iceland.
 - b. **Cone geysers:** Water spouts from a cone formed around the outlet. This cone is formed by the deposition of minerals, e.g. Old Faithful in Yellowstone, USA.
 - c. **Perpetual spouters:** The eruptions occur continuously in a fountain-like manner, e.g. Steamboat in Yellowstone, USA.

3. Discuss the effects of karst topography on humans.

Ans: Karst topography is formed on carbonate rocks due to dissolution of CaCO_3 . Its effects on humans are as follows:

Positive impacts:

- i. **Tourism Industry:** Karst landforms provide spectacular topography with caves, stalactites, stalagmites, holes, tunnels, etc. These are the major areas of tourist attraction from where the government can earn good revenue.
- ii. **Availability of minerals:** Karst areas are the valuable sources for various carbonate minerals like calcite, gypsum and limestone.

Negative impacts:

- i. **Unfit for agriculture:** Agriculture cannot be properly done in karst areas because of the inferior Terra Rossa soils and the poor soil cover. There is also a lack of surface water on such terrains.
- ii. **Unfit for construction and transportation:** Any type of construction, be it houses, factories, roads, etc. is not recommended on the fragile landform full of sink holes and also prone to subsidence.
- iii. **Lack of surface runoff:** There is acute shortage of surface runoff as most of it percolates underground.