

## UPSC Civil Services Examination

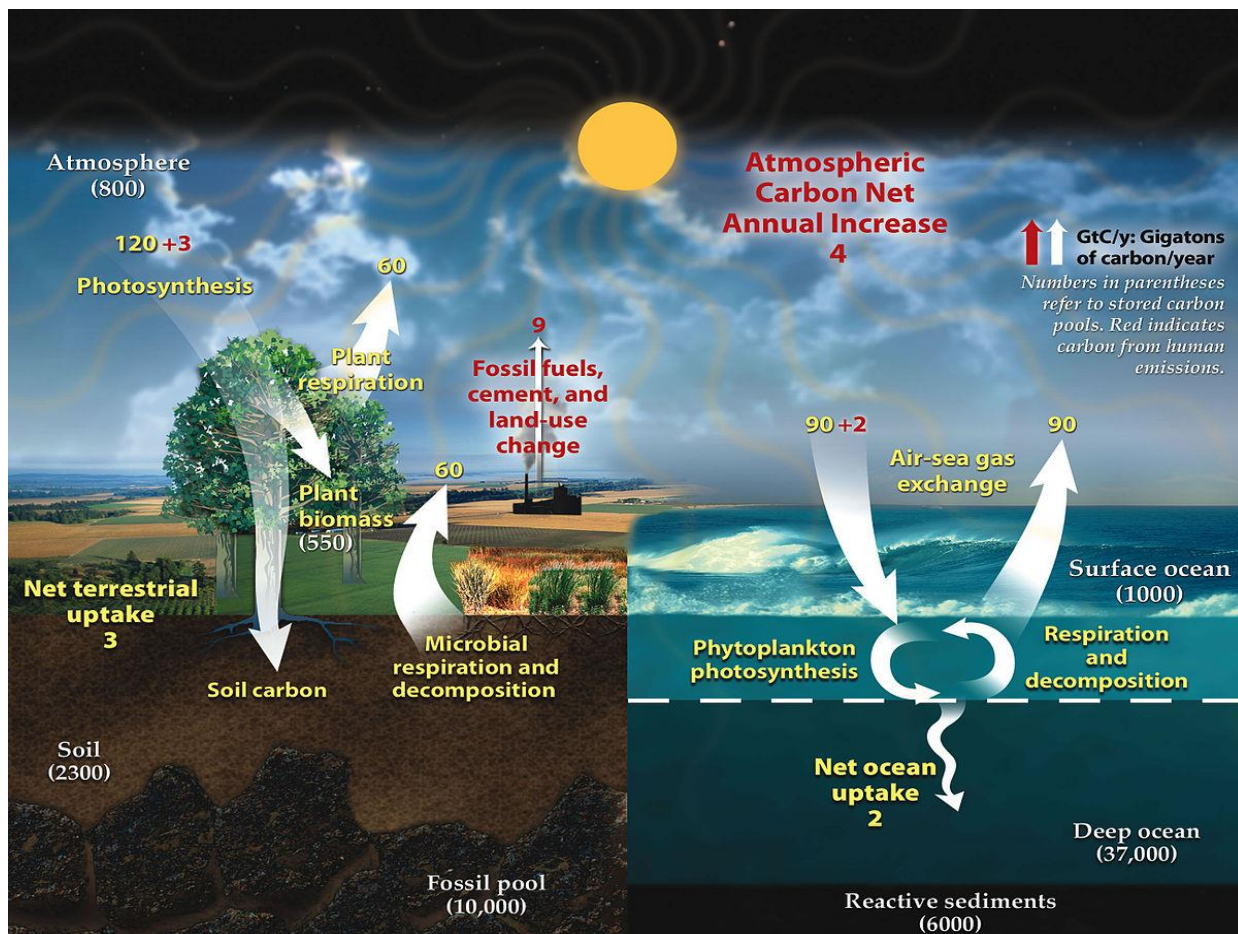
### UPSC Notes [GS-I]

#### Topic: Carbon Cycle [Geography Notes for UPSC]

##### Carbon

- Carbon is the fourth most abundant element in the universe and is absolutely essential to life on Earth.
- It is the basic element of all living organisms which are made of carbon.
- It is also a part of the ocean, air, and even rocks.
- Because the Earth is a dynamic place, carbon does not stay still.

##### The Carbon Cycle



- The carbon cycle is chiefly the conversion of carbon dioxide.
- It is the biogeochemical cycle by which carbon is interchanged among the biosphere, hydrosphere, atmosphere, and geosphere of the Earth.
- Plants use carbon dioxide and sunlight to make their own food and grow.
- The conversion of carbon dioxide is started by the fixation of carbon dioxide through photosynthesis from the atmosphere.
- Such conversion results in the creation of carbohydrate, glucose that may be transformed to other organic compounds like starch, sucrose, cellulose, etc.
- In this process, more carbon dioxide is generated and discharged through its roots or leaves during the day.
- The leftover carbohydrates become part of the plant tissue.
- Plant tissues are eaten by the herbivorous animals.
- The carbon becomes part of the plant.
- Plants that perish and are buried will turn into fossil fuels made of carbon like coal and oil over millions of years.
- Most of the carbon quickly enters the atmosphere as carbon dioxide while burning the fossil fuels.
- Carbon dioxide is a greenhouse gas and traps heat in the atmosphere.
- Earth would be a frozen world without Carbon dioxide and other greenhouse gases.