Homology indicates common ancestry. Other examples are vertebrate hearts or brains.

In plants also, the thorn and tendrils of *Bougainvillea* and *Cucurbita* represent homology.

Analogous structures: Wings of butterfly and of birds look alike. They are not anatomically similar structures though they perform similar functions. Hence, analogous structures are a result of **convergent evolution** - different structures evolving for the same function and hence they have similarity.

There are a number of examples of analogy such as - the eye of the octopus and of mammals or the flippers of Penguins and Dolphins; Sweet potato (root modification) and potato (stem modification).

It is the similar habitat that selected similar adaptive features in different groups of organisms but toward the same function:

Similarities in proteins and genes performing a given function among diverse organisms give clues to common ancestry. These biochemical similarities point to the same shared ancestry as structural similarities among diverse organisms.

In a collection of moths made in 1850s in England, i.e., before industrialisation begin, it was observed that there were more white-winged moths on trees than dark-winged or melanised moths. However, in the collection carried out from the same area after industrialisation, i.e., in 1920, there were more dark-winged moths in the same area, i.e., the proportion was reversed. Explanation: 'predators will spot a moth against a contrasting background'. During post-industrialisation period, the tree trunks became dark due to industrial smoke and soots. Under this condition the white-winged moth did not survive due to predators, dark-winged or melanised moth

survived. Before industrialisation set in, thick growth of almost white-coloured lichen covered the trees - in that background the white winged moth survived but the dark-coloured moth were picked out by predators. Lichens will not grow in areas that are polluted. Hence, moths that were able to camouflage themselves, i.e., hide in the background, survived.

That in areas where industrialisation did not occur e.g., in rural areas, the count of melanic moths was low. This showed that in a mixed population, those that can better-adapt, survive and increase in population size. That no variant is completely wiped out.

Evolution by anthropogenic action: Excess use of herbicides, pesticides, etc., has only resulted in selection of resistant varieties in a much lesser time scale. This is also true for microbes against which we employ antibiotics or drugs against eukaryotic organisms/cell. Hence, resistant organisms/cells are appearing in a time scale of months or years and not centuries. These are examples of evolution by anthropogenic action. This also tells us that evolution is not a direct process in the sense of determinism. It is a stochastic process based on chance events in nature and chance mutation in the organisms.