

Topic 2

1. (b)
2. It will disturb the food chains and food web which in turn, will decrease the chances of food availability to the succeeding trophic levels and finally result in instability of the ecosystem. *E.g.*, the removal of lions and tigers (top carnivores) will cause rapid increase in deer population, which leads to rapid consumption of vegetation resulting in scarcity of vegetation and population crash of deer.
3. Yes. The impact of removing all the organisms in a trophic level will be different for different trophic levels, *e.g.*, removal of all the producers (T_1) will adversely affect all the types of consumers including herbivores and carnivores, while the removal of all the herbivores will adversely affect only the carnivores but there will be increase in the number of the producers.
No. Removal of all the organisms of any trophic level will always adversely affect the ecosystem, *e.g.*, the removal of lions and tigers (top carnivores) will cause rapid increase in deer population, which will lead to rapid consumption of vegetation resulting in scarcity of vegetation and population crash of deer.

Topic 3

1. Biological magnification is characterised by the increase in the nonbiodegradable substances (DDT, Hg, etc.) in successive trophic levels of a food chain.
The level of such toxic substances will be different in different trophic levels of a food chain because these substances are accumulated more in higher trophic levels.

Topic 4

1. (d)
2. Non-biodegradable waste does not decompose under the action of bacteria and other microorganisms. Due to this, the vital elements trapped in them are not released back to environment in the natural way. Polythene, plastics, etc., when buried under soil render that area barren and lead to soil pollution. These wastes do not burn completely in presence of oxygen and release toxic gases which causes air pollution.
3. Even the biodegradable wastes cause the environmental pollution when the rate of their input is more than that of their decomposition. Accumulation of biodegradable wastes is responsible for:
 - (i) The excess of domestic sewage and nitrates from fertilisers causes excessive growth of phytoplanktons called algal bloom. This results in the depletion of oxygen dissolved in water, which causes suffocation and killing of aquatic animals.
 - (ii) The heaps of biodegradable solid wastes destroy the natural beauty of the landscape and make the surroundings unhygienic, while decay and decomposition of such wastes produces foul gases and causes air pollution.
4. The thinning of ozone layer results in an increase in the high energy UV-radiations reaching the earth's atmosphere, which causes increased chances of cataract and skin cancer, decreased functioning of immune system, decreased rate of photosynthesis in the plants, etc.
In 1987, UNEP (United Nations Environment Programme) succeeded in arriving at an agreement to freeze CFCs production *i.e.*, Montreal protocol. Such preventive measures are being analysed and improved continuously.
5. (a), (c) and (d)

