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DEP MIC 4TH SEM

Viva assignment

Environmental science

Q . Write a brief note on bioremediation, types of bioremediation and its advantages

ANSWER;

Bioremediation

Bioremediation is a process used to treat contamination media, including water, soil and subsurface material , by altering environmental condition to stimulate growth of microorganisms and degrade the target pollutant.

Bioremediation is a branch of biotechnology employing the use of living organisms like microbes and bacteria to remove contaminants, pollutants and toxins from soil and water .Bioremediation may be used to clean up environmental problem such as oil spills, or contaminated groundwater.

Example of bioremediation

In some cases, specialized microbial cultures are added to further enhance biodegradation. Some examples of bioremediation related technologies are phytoremediation, mycoremediation , bioventing, bioleaching , land farming , bioreactor ,composting ,bioaugmentation , rhizofiltration ,and biostimulation .

Types of Bioremediation

In Situ bioremediation;

Clean up approach that involves the direct contact between microorganisms and contamination.

Advantages;

1. Low cost
2. Minimal site disruption.
3. Simultaneous treatment of contaminated water and soil.
4. Minimal exposure of public and site personnel.

Ex Situ Bioremediation

Ex- situ conservation mean literally, ″ off-site conservation″. It is removal and collection of waste at a place to facilitates biodegradation.

Advantages of Bioremediation

•Bioremediation is a nature process and is therefore perceived by the public.

•Bio remediation is useful for the complete destruction of a wide variety of contaminants.

•Insert of transferring contaminants from one environment medium to another, for example , land to water or air , the complete destruction of target pollutants is possible.

•Bioremediation can often be carried out on side, often without causing a major disruption of normal activities.

•Bioremediation can prove less expensive than other technologies that are used for cleanup of hazardous waste.