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Q:- Write Notes on FOSSIL - AGE DETERMINATION?

1. Meaning of Fossils:-

Remains or vestiges or traces of plants and animals of the past are called fossils. These remains of organisms from past geological ages are preserved in sedimentary rocks either as actual structures or as impressions, casts or molds.

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The word 'Fossil' is derived from the Latin word "Fossilis" which means "to dig up". In the earlier studies, therefore, a large number of things dug out of earth's crust were

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called Fossils. These things also included minerals and rocks besides remains of plants and animals. Later on, however, study of Fossils were made restricted to only animals and plants.

Study of Fossils is of great importance because :-

- (i) They furnish evidence of the prehistoric life, and
- (ii) They also provide missing links in the evolutionary

Plant Fossils are rarely as well preserved as animal fossils because their tissues normally do not contain calcified structures. They are usually, therefore, completely decomposed before the process of fossilization.

The fossils or remains of large or macroscopic structures, such as leaves, branches, fruits and seeds, are

called mega fossils while those of very small or microscopic structures (e.g. spores, pollen grains, etc.) are termed as microfossils.

## 2. Formation of Fossils:-

In the basic process of fossilization, the physical part of any plant or animal must be buried with a well-protective matrix in the crust of the earth.

This matrix in the earth's crust is usually sedimentary. The sedimentary environment of this kind can be of several types such as lake, stream, inland sea or estuary etc.

Chemical weathering and flooding also help in the formation of these particles. These rock particles or sediments accumulate and water is squeezed out of them. During course of time

this makes them much more compact or rocky structure. such a rocky structure is called sedimentary rock.

some other conditions which favour fossilization include :-

- (i) Anaerobic conditions.
- (ii) low pH.
- (iii) Forest fires in the form of fossil charcoal, and
- (iv) Presence of sedimentary materials such as carbonates, silicates salts of iron, etc.

### 3. Types of Fossils:

#### (i) Sedimentary Rocks (e.g. coal):

Majority of plant materials are preserved as fossils in sedimentary rocks. Coal is the best known example of sedimentary rock. sediments of

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plant origin are crushed by overlying pressure and form coal. Present coal belt in the world, therefore, represents dense forests of the world, therefore, represents dense forest of the world of earlier times. Least metamorphosed coal shows maximum details of fossilized or preserved plant material.

(ii) Amber :-

The fossilized plant resin secreted by coniferous trees that grew in very early times is called amber. This "very early time" in the geological past ranged from Carboniferous (i.e. about 300 million years ago) to Pleistocene (i.e. about 25 million years ago.)

Fungal spores, pollen grains, etc. were trapped in this resin before fossilization.