**Agriculture college**

**Agronomy department**

**First stage L (1)**

**Definition of agriculture**

The science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products.

Agriculture, also known as farming, is the production of food, fiber, animal feed, and other goods by means of growing and harvesting plants and animals. Agriculture is practiced throughout the world. Humans invented agriculture between 7,000 and 10,000 years ago, during the Neolithic era, or the New Stone Age.

**Introduction:**

Agriculture is the most comprehensive word used to indicate the many ways in which crop plants and domestic animals sustain the global human population by providing food and other products. The English word agriculture derives from the Latin ager (field) and culture (cultivate) signifying, when combined, the Latin Agricultura: field or land tillage. But the word has come to include a very wide spectrum of activities that are integral to agriculture and have their own descriptive terms, such as cultivation, domestication, horticulture, arboriculture, and vegeculture, as well as forms of livestock management such as mixed crop-livestock(cattles) farming, pastoralism, and transhumance (the action or practice of moving livestock from one grazing ground to another in a seasonal cycle, typically to lowlands in winter and highlands in summer).

**Cultivation:**

 Cultivation is an activity through which humans become directly involved in the management of the lives and life cycles of certain plants.

cultivation involves the manipulation of soil, water, and other components of the plant environment. At its most basic, it involves sowing seeds on soil which has been cleared of other vegetation. It usually involves the preparation of the soil by tillage.

**Tillage**: methods and tools vary from simple handheld devices (digging sticks, spades, hoes) to team-employed tools, such as the Andean “foot-plow,” to animal-powered and true plows.

**Seeds:**

The grains or ripened ovules of plants used for sowing, the fertilized ripened ovule of a flowering plant containing an embryo and capable normally of germination to produce a new plant broadly: a propagative plant structure (such as a spore or small dry fruit).

**Germination:**

 Refers to the process by which an organism grows from a seed or a spore. The most common forms of germination include a seed sprouting to form a seedling and the formation of a sporeling from a spore. Thus, germination occurs primarily in plant and fungal species.

**Germination Process**

The process of germination is as follows:

Environmental conditions are favorable: For germination to occur, the environmental conditions must be favorable in order to support the growing plant. The soil depth, amount of water, and temperature are all critical conditions that must be met in order for the process of germination to be initiated. Typically, the soil conditions must be moist and warm.

Water imbibition: When environmental conditions are optimal, germination is initiated by a process termed water imbibition. The seed absorbs water through a structure called a micropyle, which induces swelling of the seed until it splits open.

Root and Shoot formation: Once the seed has ruptured, the radicle (primary root) and plumule (shoot) can emerge from the seed. This process is initiated by specific enzymes that become activated when the seed is exposed to water. The roots grow downwards, and the shoot grows upwards towards the soil surface.

A seedling is formed: Once the shoot emerges from the soil surface, the cotyledons become fully unfolded and expand, eventually forming the first leaves. Once this occurs, the plant is ready to initiate photosynthesis and is considered a seedling.