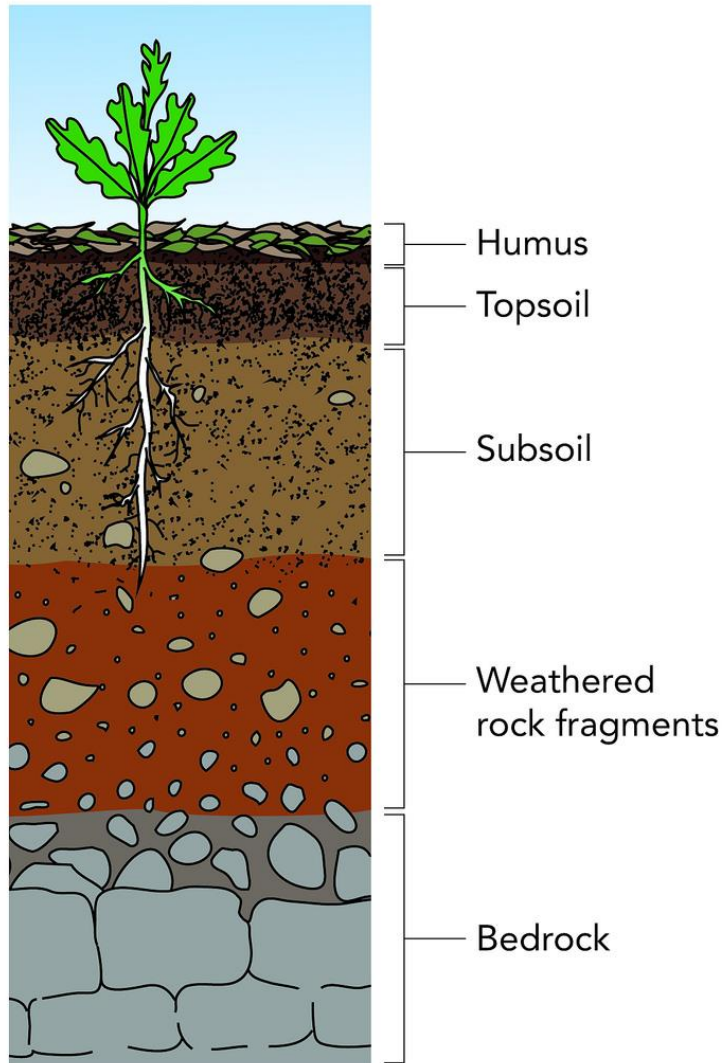


# Leaving Certificate Agricultural Science



## Soil Profile Sample Answers

## Soil Profiles

### **Podzol**

Form in areas of high rainfall, with acidic parent material such as granite usually found in hilly mountainous areas. Podzols also form in areas of cool temperatures, where the soil is acidic, or has poor drainage. Acid leaching removes Iron from the soil's top horizon and creates an Iron pan above the B horizon. The A horizon is light in colour, bleached. The iron pan leads to waterlogging and anaerobic conditions, meaning podzols have poor fertility. Podzols require deep ploughing or sub-soiling to remove the iron pan and allow water to move downwards and roots to do the same.

### **Gley**

Form in areas of high rainfall, lowland or gently sloping hillsides with poor drainage, above an impermeable sub soil or in soils with a high water table. This leads to waterlogging, leaching of minerals, anaerobic conditions which forms a blue-grey/blue-green B horizon. The process of forming a gley is know as gleisation. Very little bacterial or decomposition activity occurs and therefore peat begins to accumulate on top.

### **Brown Earth**

Naturally fertile soil suitable for Tillage, high in organic matter and easily cultivates. Deep A horizon, well drained/aerated, has a suitable pH (slightly acidic to basic).

### **Bog**

Peat bogs form in areas of high rainfall (Blanket) or in a depression in the land (Basin/Raised). Soils are leached due to acidic conditions forming an iron pan causing the soil to become waterlogged, anaerobic and therefore unable to decompose organic matter with leads to it's build up in the form of peat. Basin bogs can be up to 10m deep in a small area, while Blanket bogs form over large areas such as mountainous areas and are shallow, approx. 1-2m deep

**Brown Earth**

**Podzol**

**Gley**

**Bog**