Explain how chemical weathering has shaped an underground Karst landscape.

A dripstone underground cavern is an example of an underground Karst landscape. When a river begins to flow over an exposed limestone pavement, some of the water begins to percolate down the joints in the permeable limestone. These joints are enlarged by the process of carbonation. This is when rain passing through the atmosphere absorbs carbon dioxide to form a weak carbonic acid. This carbonic acid reacts with calcium carbonate in the limestone rock to form a soluble calcium bicarbonate. This soluble calcium bicarbonate is easily washed away by the river or rain. This causes the limestone rock to become weathered and slowly disintegrate. This can be the starting of a swallow hole, a funnel shaped hole where rivers disappear underground. One such hole is the Pollnagollum hole in the Burren Co. Clare. Hydraulic action, the sheer force of the moving water, further enlarges the hole. This often occurs where a band of hard rock such as granite meets with a soft rock such as limestone that erodes that is easier and faster at eroding. Dry valley occurs as the valley downstream comes deprived of water as it is now flowing underground. Most caverns occur in a zone of saturation, an area that is filled with rainwater that has drained through the soil from the surface. As the rainwater seeps through the soil it become more acidic by absorbing humic acid from the rotting vegetation. This also helps to wear the limestone rock away. Overtime the water table may subside within an underground cave, and there is no longer large quantities of water within them. Such caves can turn into tourist attractions such as the Ailwee caves in the Burren. However, some water containing dissolved limestone may still make it to the cave. It will form droplets on the roof of the cavern. The water may evaporate only leaving tiny rings of white calcite behind. Overtime, more droplets will come and evaporate, allowing the ring to grow downwards where it will form a hollow, straw shaped stalactite, hanging from the ceiling. The stalactites may become thicker and stop extending downwards if a grain of sand blocks the hollow part of the “straw”. Sometimes, Cracks along the cavern’s roof allow a long line of water to evaporate, forming calcite deposits along its path. As evaporation continues to occur over time, a cave curtain will form. Stalagmite are domes shaped mounds that grow towards the ceiling from the floor. They are formed when drops splash, hit the

floor and evaporate directly beneath the stalactite. A pillar may form when the stalactite and stalagmite meet as time passes. Such as the Tir Na nÓg pillar in the Mitchelstown caves in County Tipperary.