

Difference Between Folding and Faulting

Folding and faulting are two terms in geology used to describe the changes the surface of the earth goes through.

In structural geology, a fold is a stack of originally planar surfaces, such as sedimentary strata, that are bent or curved during permanent deformation.

A fault is a fracture in rock where there has been movement and displacement.

This article will further give differences between Folding and Faulting within the context of the IAS Exam

Difference between Folding and Faulting	
Folding	Faulting
Folds are bends in the rocks that are due to compressional forces	Faults are due to tensional forces along which displacements of rocks take place
Folding occurs when compressional force is applied to rocks that are ductile or flexible	Faults occur when forces operating in opposite directions leads to tension and as a result rocks develop cracks on the fissure
Rocks that lie deep within the crust and therefore are under high pressure are generally ductile and particularly susceptible to folding without breaking	Rock layers that are near the surface and not under high confining pressure are too rigid to bend into folds, but if the tectonic plates are too large rocks break
Folds form under varied conditions of stress, pore pressure, and temperature gradient, as evidenced by their presence in soft sediments, the full spectrum of metamorphic rocks	With normal dip-slip faults, the rock masses compress on each other vertically, and the rock that moves heads downward.
Folds are commonly formed by shortening of existing layers, but may also be formed as a result of displacement on a non-planar fault	A fault plane is the plane that represents the fracture surface of a fault. A fault trace or fault line is a place where the fault can be seen or mapped on the surface.
A fold surface seen perpendicular to its shortening direction can be divided into <i>hinge</i> and <i>limb</i> portions, the limbs are the flanks of the fold and the hinge zone is where the limbs converge.	A fault zone is a cluster of parallel faults. However, the term is also used for the zone of crushed rock along a single fault.
Minor folds are quite frequently seen in outcrops	All faults have a measurable thickness, made up

major folds seldom are except in the more arid countries. Minor folds can, however, often provide the key to the major folds they are related to	of deformed rock characteristic of the level in the crust where the faulting happened, of the rock types affected by the fault and of the presence and nature of any mineralising fluids.
Folding resulted in the Himalayan Mountains, Alps etc	Faulting results in the formation of block mountains and river valleys like the Narmada, Tapi