3.3 DISTINCTION BETWEEN IGNEOUS, SEDIMENTARY, AND METAMORPHIC ROCKS

Sl.No	Description	Igneous rocks	Sedimentary rocks	Metamorphic rocks
1.	**Origin**	Formed due to consolidation of magma.	Formed due to weathering and erosional processes of igneous rocks.	Formed due to metamorphism of igneous and sedimentary rocks.
2.	**Source material**	Magma is the source material	Igneous or metamorphic rocks are the source materials.	Igneous and sedimentary rocks are the source materials.
3.	**Interlocking texture**	It shows the interlocking texture of mineral grains. i.e., all the constituent mineral grains are tightly packed and interlocked.	No interlocking texture.	Some rocks are interlocking and some are not interlocking.
4.	**Cementing media**	No cementing media in between mineral grains of rocks.	Many have cementing media, binding the mineral grains.	No cementing media present. **Exception** : quartzite
5.	**Composition**	Its composition depends upon the composition of parent magma.	Its composition depends upon the composition of igneous rocks from which they are formed.	Its composition depends upon the composition of its parent rocks.
6.	**Structure/ form**	Sill & dyke, sheet structure, phacoliths, batholith, columnar,	Stratification, graded bedding, cross bedding, oolitic, Pisolitic, etc.	Schistose structure, gneisses structure, foliation, etc.

		lopolith, amygdaloidal structure, etc.		
7.	**Texture**	Hollocrystalline, Phaneric, medium to coarse grained, Porphyritic, Panidiomorphic, Euhedral, subhedral, etc.	Clastic and non clastic texture, angular, sub angular, rounded, sub rounded, etc.	Crystalloblastic, blastoporphyritic, palimpsest texture, Granoblastic, Idioblastic, Xenoblastic, etc.
8.	**Stratification**	No stratification	Found in many of these types rocks	No stratification
9.	**Compressive strength**	Compressive strength is generally higher than that of sedimentary rocks.	Compressive strength is generally less than that of igneous rock.	Compressive strength is generally higher than that of sedimentary rock.
10.	**Specific gravity**	Specific gravity is generally higher than that of sedimentary rocks.	Specific gravity is generally higher than that of sedimentary rocks.	Specific gravity is generally higher than that of sedimentary rocks.
11.	**Organic process**	No organic process involved	Organic process involved in some formation of sedimentary rocks.	No organic process involved.
12.	**Fossil content**	No fossil contents present.	Some verities have fossil content preserved within them.	No fossil contents present.
13.	**Metallic minerals**	Some metallic minerals are associated with some of these types of rocks.	No metallic mineral found.	No metallic mineral found.
14.	**Reservoir rocks for oil**	These rocks do not serve as reservoir	Some variety serves as reservoir rocks	These rocks do not serve as reservoir

	& gas	rocks for oil and natural gas.	for accumulation of oil & gas.	rock for oil and natural gas.
15.	**Examples**	Granite, Syenites, dolerite, basalt, gabbro, etc.	Sandstone, limestone, shale, etc	Marble, schist, gneiss, slate, etc.
16.	**Uses**	Used as i. Building stones & monumental stones ii. Road metals iii. Concrete aggregate	Used as i. Building stones ii. Concrete aggregate iii. Raw material for mnufacturing (some variety) eg. Limestone for cement mnufacturing.	Used as i. Building stones (some variety) eg. Marble. ii. Road metals iii. Concrete aggregate iv. Slab (some variety) eg. slate