

o Indian Geological history is divided into:-

- 1] Archaean Times
- 2] Purana Times
- 3] Dravidian Times
- 4] Gondwana Times
- 5] Aryan Times

Geological Time scale [ Holland for India ]

EON	ERA	Period	EPOCH	
Phanerozoic	Cenozoic	Quaternary	<b>ARYAN TIMES</b> (Mid Jurassic to present)	
		Tertiary		
	Mesozoic	Cretaceous	<b>GONDWANA TIMES</b> (Mid Carboniferous to Mid Jurassic)	
		Jurassic Triassic		
	Paleozoic	Permian Carboniferous Devonian Silurian Ordovician Cambrian		<b>DRAVIDIAN TIMES</b> (Mid Carboniferous to Cambrian)
Purana Archaean	Pre Cambrian	<b>PURANA TIMES</b>		
		<b>ARCHAEN TIMES</b>		

## Rock Types of India -

- India has a range of Geological Diversity. It is one of oldest continental blocks of the world older than 2-2.5 bn years
- India also has some of youngest landforms of world such as Himalayan Fold Mt. Formed during Tertiary times
- Peninsular Plateau of India has some of the oldest rocks of the world. They are old, highly modified landforms called as Craton



[Cratons are the core of the continents which are massive, ancient & highly metamorphosed & transformed landforms & rocks.]

- Indian Craton is made up of special type of rocks called as Green stones. In places these cratons got exposed & there are two types of Cratonic rocks which are visible

◦ Exposed terrations are two types of rocks

1] Aurchean Rocks -

① Aurchean Gneiss

② Aurchean Sedimentary - Dharwar Rocks

◦ Dharwar rocks - It discovered in parts of Karnataka found in parts CNP, southern Aravalli & eastern Rajasthan & scattered across parts of Bastar Highlands & parts of Meghalaya.

◦ Dharwar rocks of India are some of most mineral rich rocks & a range



of metallic & metalliferous mineral resources such as Iron ore, manganese, copper, zinc, lead and also Uranium.

◦ India's richest Iron ore mines are in this region.

## 2] Purana Rocks -

• These are ancient sedimentary metamorphosed rock but those which had accumulated in shallow basins or small geosynclines

- Types
- **Vindhayan Rocks** - Uplifted into Vindhayan Mountains. They are partly fold Mt. formed by uplifted Vindhayan Sedimentary.
  - **Cuddapah Rocks** (South of Andhra Pradesh - Rayal seema)

\* They are imp building stones

\* They are also found in Rajasthan, Southern C.G, parts of Orissa & Karnataka.

- Vindhayan Rocks - primarily found along Vindhayas, southern C.G & Karnataka

### 3] Dravidian Rocks

- Almost missing in Deccan Plateau
- Dravidian rocks & stratigraphy is missing in Deccan Plateau. Perhaps rocks were softer  $\therefore$  early eroded. There are some remnants of Dravidian rocks in parts of MP near Ujjain.
- However, Dravidian Rocks are found in Himalayan Ranges

◦ Some of sub categories of Dravidian rocks -

\* Harmantia rocks - Cambrian rocks founds in parts of HP in Spiti valley & parts of Kumaon & J.K. They are sandstone & shale.

\* Ordovician rocks & Silurian rocks - found in Lahul Spiti Region of HP &

Jodder Valley in Kashmir.

- Otherwise Dniavidian rocks are not commonly found in India.

#### 4] Gondwana Rocks

- Associated with extensive Rifting systems in India. These areas witnessed massive fractures & Rift valley that became Gondwana coal fields of India during ~~Cretaceous~~ Permian & Tertiary times.
- There are 4 locations where Gondwana coal fields have best developed. ÷

◦ Compared to Carboniferous Coal of Europe & America which are richer with higher carbon content, Indian coal is relatively inferior because it is younger & has more impurities, moisture & higher ash content.

◦ Despite abundance of coal of India, India is a net importer of coal.

\* In some of geological time scale, G is considered as part of Aryan groups of rocks

### 5] Aryan Rocks -

◦ Relatively younger

◦ Rocks of late Cretaceous (60-62 mya).

◦ Rocks belong to formation called as

Deccan Lava Rocks (> 5 lakh sq. km)

Basaltic Lava Rocks - Maharashtra,

part of M.P, Gujarat, N. Karnataka &

W. Telangana

◦ Deccan Lava rocks - have formed fertile soil called as Black Cotton soil or Regur soil - now imp for agriculture.

### ② Cenozoic rocks / Tertiary Rocks

◦ Part of Himalayan Mt. system  
◦ They are sedimentary & sedimentary Metamorphic rocks that made up Himalayan system.

◦ Mixed of Limestone, sandstone, shale, Schist, Phyllites.