

MINERALS AND ENERGY RESOURCES

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What is a Mineral?

Definition: "Homogeneous naturally occurring substance with definable internal structure."



♦ Interesting Points:



• Minerals are not evenly distributed.



• 2000+ minerals identified but only few are abundant.

♦ Minerals are found in 3 forms:



1. Veins & Lodes → tin, lead



2. Beds & Layers → coal, iron



3. Alluvial Deposits → gold, silver



Interesting Fact:

Smallest occurrence → single crystal

Largest → huge rock



Difference between Rocks and Minerals:

→ Rocks → combination of minerals.



✍ Tip for Exam: Remember — All minerals are natural, but not all rocks are minerals! ✨

IMPORTANT MINERALS - TABLE WITH STATES & FEATURES

Class 10 — Geography | Minerals Table

<u>Mineral</u>	<u>Features / Uses</u>	<u>Major States in India</u>	<u>Interesting Point</u>
Iron Ore	— Magnetite (72% iron) → best quality; Hematite (60-70%) → most used; Main source for steel production	Odisha, Jharkhand, Chhattisgarh, Karnataka, Goa	Forms red soil (laterite); Most important mineral for iron & steel industry ★
Manganese	— Used in steel making to remove impurities; Used in bleaching, insecticides & batteries	Odisha, Karnataka, Madhya Pradesh, Maharashtra	Called the "Vitamin of Steel" for strengthening steel ★
Copper	— Malleable & ductile; Good conductor of electricity; Used in electrical wiring & electronics	Madhya Pradesh (Balaghat); Rajasthan (Khetri); Jharkhand	Khetri is known as the "Copper Capital of Rajasthan" ★
Bauxite	— Aluminium ore; Used to extract aluminium metal; Used in utensils & aircrafts	Odisha (largest producer); Gujarat; Jharkhand; Maharashtra	Odisha produces the largest share in India ★
Mica	— Excellent insulator of electricity & heat; Used in electrical & electronics industries	Jharkhand; Rajasthan; Andhra Pradesh	Also called "Glass of Sands"; splits into thin sheets ★
Gold	— Found as alluvial deposits; Used in jewellery, electronics & currency reserve	Karnataka (Kolar); Telangana	Kolar Gold Fields (KGF) is India's first gold mine, now closed ★

★ Tip: Remember — Iron & Manganese → Steel Industry | Copper & Mica → Electrical Industry | Bauxite → Aluminium | Gold → Jewellery

ENERGY RESOURCES - CONVENTIONAL

Class 10 • Science | Topper Notes



1. Coal — Bulk fossil fuel

• 4 types:

- Peat — low carbon (lowest quality)
- Lignite — soft (brown coal)
- Bituminous — most used (common for power generation)
- Anthracite — highest quality (hard coal, high carbon content)



• Major States:

- Jharkhand — Jharia
- Odisha
- Chhattisgarh
- West Bengal (WB) — Raniganj

★ Interesting: Coal is called "Black Gold"



2. Petroleum — Liquid gold

- Used as fuel for vehicles, machinery, industries
- Major States:
 - Mumbai High (offshore, Maharashtra)
 - Gujarat



3. Natural Gas — Cleanest fossil fuel

- Used as CNG (Compressed Natural Gas) for vehicles
- Found along with petroleum deposits
- Major:
 - Krishna-Godavari Basin (Andhra Pradesh)
 - Mumbai High



4. Electricity — Generated from

- Thermal Power — from burning coal / petroleum
 - Hydro Power — from flowing water (hydroelectric dams)
- Conventional sources are finite & non-renewable

Tip: Remember → Peat < Lignite < Bituminous < Anthracite (quality ↑)

NON-CONVENTIONAL ENERGY RESOURCES - TABLE

	Energy Source	How it works	Advantages	Where found in India
	1. Solar Energy	— Energy from sun using solar panels	— Clean, renewable, low cost after setup	— Rajasthan, Gujarat, Ladakh
	2. Wind Energy	— Wind mills convert wind to electricity	— No pollution, renewable	— Tamil Nadu, Gujarat, Maharashtra (largest wind farms)
	3. Biogas	— From animal dung, plant waste	— Cheap, manages waste	— Rural areas, Punjab, UP
	4. Tidal Energy	— Tides drive turbines	— Predictable, clean	— Gulf of Khambhat, Gulf of Kutch, Kerala coast
	5. Geothermal Energy	— Heat from inside Earth	— Continuous supply	— Manikaran in HP, Puga Valley Ladakh

CONSERVATION

-  1. Use energy judiciously
-  2. Use public transport
-  3. Switch off lights
-  4. Use renewable sources

* Eco-friendly • Sustainable • Clean Power *