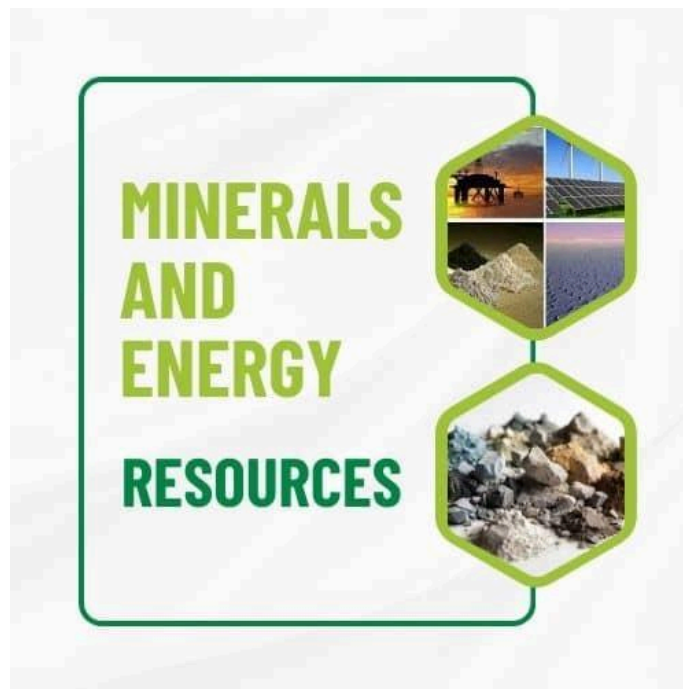




NCERT Geography Class 10th Chapter 5:

Minerals and Energy Resources

Introduction To Minerals and Energy Resources



1. Introduction to Minerals/What is a mineral?:

- Minerals are homogeneous, naturally occurring substances with a definable internal structure.

- **Found in varied forms:**
 - a. Hardest: Diamond.
 - b. Softest: Talc.
- Minerals are the building blocks of rocks, which can be single-mineral (e.g., limestone) or multi-mineral compositions.

2. Importance of Minerals:

- **Daily Life Usage:**
 - a. Minerals are essential for everything from a pin to a ship.
 - b. Used in construction (buildings, roads, railway tracks) and manufacturing (cars, buses, machinery).
 - c. Power sources like fuels are derived from the earth's minerals.
- **Human Life Dependency:**
 - a. Life processes depend on minerals; they enable the utilization of other nutrients.
 - b. Only 0.3% of nutrient intake comes from minerals critical for survival.
- **Cultural Significance:** Minerals have been used historically for livelihood, decoration, ceremonies, and religious rites.

3. Properties of Minerals:

- Minerals differ due to physical and chemical conditions during formation.
- Properties used for classification:
 - a. Colour, hardness, crystal form, lustre, and density.
- Minerals vary in abundance: Over 2000 minerals identified, but only a few are common in most rocks.

4. Geological Perspective:

- **Formation of Minerals:** A combination of elements forms specific minerals under certain conditions.
- **Minerals in Rocks:**
 - a. Rocks are combinations of minerals in varying proportions.
 - b. Example: Limestone contains a single mineral; others are multi-mineral.

5. Role of Geographers and Geologists:

- **Geographers:** Study minerals to understand landforms, distribution, and associated economic activities.
- **Geologists:** Focus on the formation, age, physical and chemical composition of minerals.

6. Applications and Daily Observations:

- **Transportation Systems:**
 - a. Buses, trains, and aeroplanes are made of minerals and run on mineral-derived fuels.
- **Toothpaste Ingredients:**
 - a. Cleaning agents: Silica, limestone, aluminium oxide, phosphate minerals.
 - b. Fluoride: From fluorite to prevent cavities.
 - c. Whitening: Titanium oxide from rutile, ilmenite, anatase.
 - d. Sparkle: From mica.
- **Light Bulb:** Investigate the variety of minerals involved in its creation.
- **Plastics in Toothbrush:** Derived from petroleum, showcasing the role of minerals in modern life.

7. Classification of Minerals:

- Minerals can be classified based on their geological formation, properties, and commercial uses.

8. Case Study from Text:

- Haban's visit to Guwahati highlights the role of minerals in creating transportation systems (buses and trains made of iron, and aluminium).
- Minerals are indispensable in socio-economic activities, supporting daily life and industrial growth.

MCQ Questions on NCERT Geography Class 10 Chapter 5 | Introduction for Minerals and Energy Resources

Question 1. What is the main material used to make buses and trains?

- A. Wood
- B. Bricks
- C. Iron and Aluminium
- D. Plastic

Answer: C. Iron and Aluminium

Question 2. Which mineral is used in toothpaste to reduce cavities?

- A. Silica
- B. Fluorite
- C. Rutile
- D. Mica

Answer: B. Fluorite

Question 3. What gives sparkle to some toothpaste?

- A. Titanium Oxide
- B. Mica
- C. Aluminium Oxide
- D. Limestone

Answer: B. Mica

Question 4. From which material are toothbrushes made?

- A. Plastic from petroleum
- B. Metal from iron
- C. Rubber from latex
- D. Wood from trees

Answer: A. Plastic from petroleum

Question 5. What percentage of our total nutrient intake is represented by minerals?

- A. 50%
- B. 10%
- C. 5%
- D. 0.3%

Answer: D. 0.3%

Question 6. What defines a mineral according to geologists?

- A. Heterogeneous, naturally occurring substance
- B. Homogeneous, naturally occurring substance with a definable internal structure
- C. A combination of metals
- D. A synthetic compound

Answer: B. Homogeneous, naturally occurring substance with a definable internal structure

Question 7. Which of the following is the hardest mineral?

- A. Talc
- B. Quartz
- C. Diamond
- D. Feldspar

Answer: C. Diamond

Question 8. Which of the following is the softest mineral?

- A. Quartz
- B. Talc
- C. Gypsum
- D. Calcite

Answer: B. Talc

Question 9. What property is NOT used to classify minerals?

- A. Colour
- B. Hardness
- C. Taste
- D. Lustre

Answer: C. Taste

Question 10. Which of the following is an example of a single-mineral rock?

- A. Granite
- B. Limestone
- C. Basalt
- D. Sandstone

Answer: B. Limestone

Question 11. Which everyday object is made using abrasive minerals like silica and limestone?

- A. Glass
- B. Toothpaste
- C. Plastic
- D. Metal rods

Answer: B. Toothpaste

Question 12. What is the primary source material for the tarmac used in road construction?

- A. Sand
- B. Minerals
- C. Cement
- D. Asphalt

Answer: B. Minerals

Question 13. Which mineral is used to make light bulbs?

- A. Tungsten
- B. Quartz
- C. Fluorite
- D. Rutile

Answer: A. Tungsten

Question 14. What is the main use of titanium oxide in toothpaste?

- A. Reducing cavities
- B. Adding sparkle
- C. Making it white
- D. Strengthening enamel

Answer: C. Making it white

Question 15. What is a major interest of geographers in the study of minerals?

- A. Formation of minerals
- B. Distribution and economic activities associated with minerals
- C. Chemical composition of minerals
- D. Crystal forms of minerals

Answer: B. Distribution and economic activities associated with minerals

Question 16. Which mineral is commonly used in rituals and decorations?

- A. Talc
- B. Mica
- C. Quartz
- D. Diamond

Answer: D. Diamond

Question 17. Which rock is composed of several minerals in varying proportions?

- A. Granite
- B. Limestone
- C. Coal
- D. Salt

Answer: A. Granite

Question 18. What determines the type of mineral formed?

- A. The type of rock it is embedded in
- B. The physical and chemical conditions during formation
- C. Its colour
- D. The depth at which it is found

Answer: B. The physical and chemical conditions during formation

Question 19. What property of minerals results in their wide range of appearances?

- A. Variation in soil types
- B. Chemical composition and formation conditions
- C. Age of the mineral
- D. Exposure to sunlight

Answer: B. Chemical composition and formation conditions

Question 20. Which profession primarily focuses on the formation and age of minerals?

- A. Geographer
- B. Geologist
- C. Mineralogist
- D. Environmentalist

Answer: B. Geologist

Mode Of Occurrence Of Minerals

1. Minerals and Ores:

- Minerals are typically found in ores, mineral accumulations mixed with other elements.
- Ore extraction is viable only if the mineral content is sufficiently concentrated.
- The ease of mining and the cost of extraction depends on the type of formation where the minerals occur.

2. Forms in Which Minerals Occur:

- **Igneous and Metamorphic Rocks:**
 - a. Found in cracks, crevices, faults, and joints.
 - b. Smaller deposits: Veins; larger deposits: Lodes.
 - c. Examples: Tin, copper, zinc, and lead.
- **Sedimentary Rocks:**
 - a. Found in beds or layers.
 - b. Examples: Coal, iron ore (formed under heat and pressure),

gypsum, potash salt, and sodium salt (formed due to evaporation in arid regions).

- **Residual Material:**

- a. Formed by the decomposition of surface rocks and removal of soluble constituents.

- b. Example: Bauxite.

- **Placer Deposits:**

- a. Found in sands of valley floors or hill bases.

- b. Example: Gold, silver, tin, and platinum (non-corroding minerals).

- **Ocean Sources:**

- a. Ocean waters: Contain minerals like common salt, magnesium, and bromine.

- b. Ocean beds: Rich in manganese nodules.

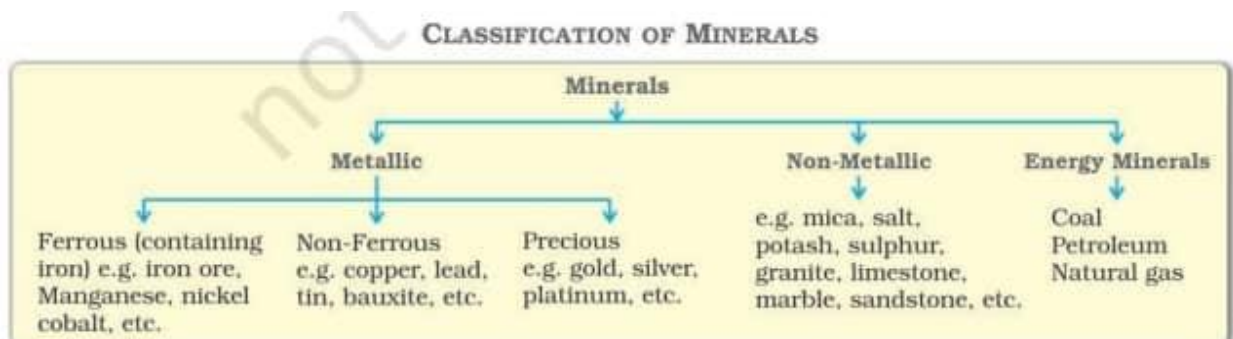
3. Mining in India:

- **Rat-hole mining in Meghalaya:**

- a. Involves narrow tunnels dug by individuals or families.

- b. Declared illegal by the National Green Tribunal due to environmental and health hazards.

4. Distribution of Minerals in India:



- **Peninsular Rocks:** Rich in coal, metallic minerals, mica, and non-metallic minerals.

- **Sedimentary Rocks:** Found in Gujarat and Assam; they contain petroleum deposits.
- **Alluvial Plains of North India:** Almost devoid of economic minerals.
- **Rajasthan:** Rich in non-ferrous minerals due to its geological structure.

5. Ferrous Minerals:

- **Iron Ore:**
 - a. The backbone of industrial development.
 - b. Magnetite: High iron content (~70%), used in the electrical industry.
 - c. Hematite: Major industrial use; slightly lower iron content (50–60%).
 - d. **Major iron ore belts:**
 - I. Odisha–Jharkhand: Badampahar, Gua, Noamundi.
 - II. Durg–Bastar–Chandrapur: Bailadila range; high-grade ore exported to Japan and South Korea.
 - III. Ballari–Chitradurga–Tumakuru: Kudremukh mines export ore as slurry.
 - IV. Maharashtra–Goa: Marmagao port exports ore.

- **Manganese:**

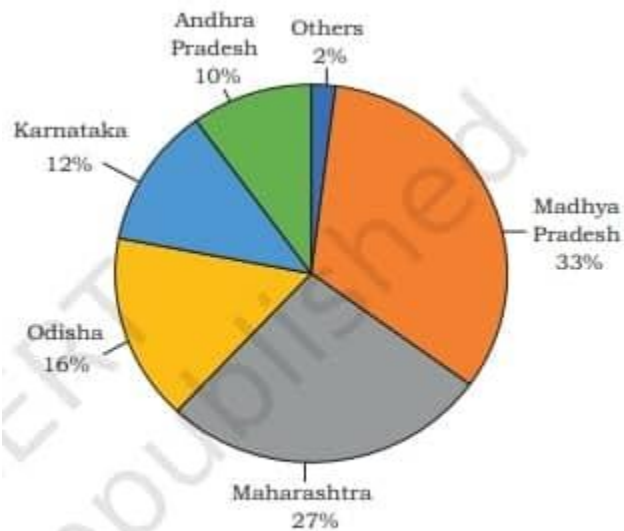


Fig. 5.3: Production of Manganese showing state-wise share in per cent, 2018-19

- a. Used in steel manufacturing, bleaching powder, insecticides, and paints.
- b. 10 kg of manganese needed for 1 tonne of steel.

6. Non-Ferrous Minerals:

- **Copper:**

- a. Used in electrical cables, electronics, and chemical industries.
- b. Major mines: Balaghat (Madhya Pradesh), Khetri (Rajasthan), Singhbhum (Jharkhand).

- **Bauxite:**

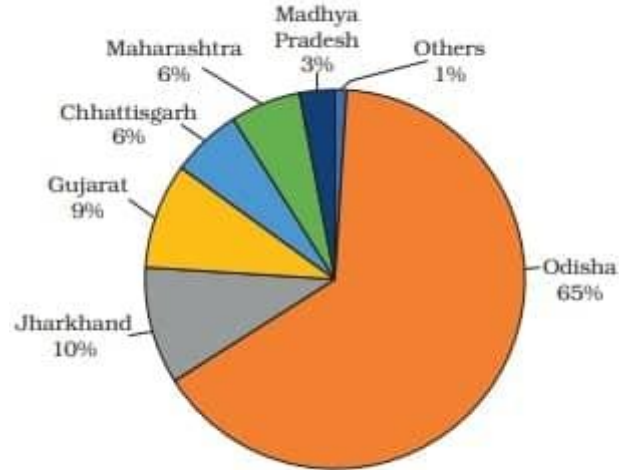


Fig. 5.5: Production of Bauxite showing state-wise share in per cent, 2018-19

- a. Source of aluminium, known for its lightness and conductivity.
- b. Major deposits: Amarkantak plateau, Maikal hills, Bilaspur-Katni plateau (Odisha leads production).

7. Non-Metallic Minerals:

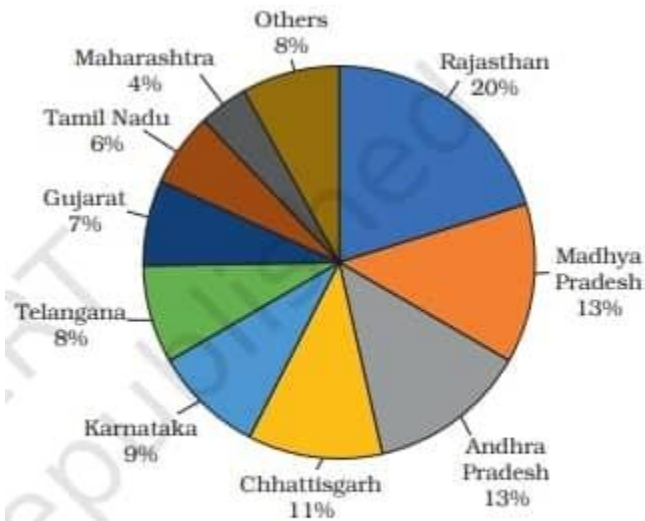


Fig. 5.7: Production of Limestone showing state-wise share in per cent, 2018-19

- **Mica:**
 - a. Found in thin sheets; excellent insulating properties.

b. Major deposits: Chota Nagpur plateau (Jharkhand), Ajmer (Rajasthan), Nellore (Andhra Pradesh).

- **Limestone:**

a. Used in the cement industry and smelting iron ore.

b. Found in sedimentary rock formations.

8. Environmental and Health Hazards of Mining:

- **Health Risks:**

a. Dust and fumes cause pulmonary diseases.

b. Risks of collapsing roofs, inundation, and coal mine fires.

- **Environmental Degradation:**

a. Contamination of water sources.

b. Land and soil degradation due to waste dumping.

c. Stream and river pollution from slurry.

- **Regulations Needed:**

a. Stricter safety and environmental laws are essential.

Key Terms and Facts:

1. **Veins and Lodes:** Smaller and larger mineral deposits in igneous/metamorphic rocks.
2. **Rat-hole Mining:** Illegal coal mining in Meghalaya.
3. **Kudremukh:** Largest iron ore deposits, 100% export unit in Karnataka.
4. **Bailadila Range:** High-grade iron ore with excellent steel-making properties.
5. **Chota Nagpur Plateau:** Known as the “storehouse of minerals” in India.

FAQ's

Question 1. What is the difference between open-pit mining, quarries, and underground mining?

Answer:

1. Open-pit mining involves extracting minerals from a large, open excavation on the surface.
2. Quarries are open-pit mines specifically used for extracting building materials like stones and sand.
3. Underground mining uses shafts and tunnels to extract minerals deep below the earth's surface.

Question 2. Why is Chota Nagpur considered a storehouse of minerals?

Answer:

1. Chota Nagpur Plateau is rich in metallic minerals like iron ore, manganese, and mica, along with non-metallic minerals like limestone.
2. Its unique geological structure, including igneous and metamorphic rocks, contributes to its abundant mineral resources.

Question 3. How are iron ore, manganese, and coal linked to the iron and steel industry?

Answer:

1. Iron ore is the primary raw material for steel production.
2. Manganese is essential for making steel, as 10 kg of manganese is required per tonne of steel.

3. Coal is used as a fuel and reducing agent in smelting iron ore to produce steel.

Question 4. Where are these minerals found?

Answer: Minerals are usually found in ores, accumulations of minerals mixed with other elements. The concentration of the mineral in the ore must be sufficient to make its extraction commercially viable. The ease and cost of mining mineral ores depend on the type of geological formation or structure in which they are found. Understanding these formations is essential for efficient extraction.

MCQ Questions on NCERT Geography Class 10 Chapter 5 | Mode Of Occurrence Of Minerals

Question 1. What is an ore?

- A. A single pure mineral
- B. A naturally occurring solid with no economic use
- C. An accumulation of minerals mixed with other elements
- D. A material used for construction

Answer: C. An accumulation of minerals mixed with other elements

Question 2. What are the smaller mineral occurrences in igneous and metamorphic rocks called?

- A. Lodes
- B. Veins
- C. Placer deposits
- D. Residual deposits

Answer: B. Veins

Question 3. Which mineral is commonly obtained from veins and lodes?

- A. Coal
- B. Tin
- C. Sodium salt
- D. Bauxite

Answer: B. Tin

Question 4. How are minerals like gypsum and sodium salt formed in sedimentary rocks?

- A. Deposition in horizontal strata
- B. Cooling of molten materials
- C. Evaporation in arid regions
- D. Decomposition of surface rocks

Answer: C. Evaporation in arid regions

Question 5. Which process forms bauxite deposits?

- A. Sedimentation
- B. Decomposition of surface rocks and removal of soluble constituents
- C. Evaporation in arid regions
- D. Solidification of molten minerals

Answer: B. Decomposition of surface rocks and removal of soluble constituents

Question 6. What are placer deposits?

- A. Minerals found in ocean water
- B. Deposits found in cracks and crevices
- C. Alluvial deposits in valley floors and hill bases
- D. Minerals formed under high heat and pressure

Answer: C. Alluvial deposits in valley floors and hill bases

Question 7. Which mineral is NOT typically found in placer deposits?

- A. Gold
- B. Silver
- C. Platinum
- D. Hematite

Answer: D. Hematite

Question 8. Which mineral is largely derived from ocean waters?

- A. Manganese
- B. Bromine
- C. Bauxite
- D. Copper

Answer: B. Bromine

Question 9. Which type of rock contains most of India's coal and metallic minerals?

- A. Sedimentary rocks
- B. Igneous rocks

- C. Peninsular rocks
- D. Alluvial rocks

Answer: C. Peninsular rocks

Question 10. Where are India's petroleum deposits primarily located?

- A. Chota Nagpur Plateau
- B. Gujarat and Assam
- C. Rajasthan
- D. Odisha and Jharkhand

Answer: B. Gujarat and Assam

Question 11. Which region in India has the least economic minerals?

- A. Peninsular region
- B. Western coastal plains
- C. Alluvial plains of North India
- D. Chota Nagpur Plateau

Answer: C. Alluvial plains of North India

Question 12. Which state has the highest production of bauxite in India?

- A. Madhya Pradesh
- B. Odisha
- C. Rajasthan
- D. Karnataka

Answer: B. Odisha

Question 13. The Kudremukh mines in Karnataka are known for which mineral?

- A. Manganese
- B. Copper
- C. Iron Ore
- D. Limestone

Answer: C. Iron Ore

Question 14. Which type of iron ore has the highest iron content?

- A. Hematite
- B. Magnetite
- C. Limonite
- D. Siderite

Answer: B. Magnetite

Question 15. Which mineral is essential in the production of steel?

- A. Bauxite
- B. Manganese
- C. Copper
- D. Gold

Answer: B. Manganese

Question 16. Which mineral is primarily used in electrical cables?

- A. Copper
- B. Iron
- C. Aluminium
- D. Mica

Answer: A. Copper

Question 17. Which mineral is the basic raw material for cement production?

- A. Mica
- B. Limestone
- C. Bauxite
- D. Magnetite

Answer: B. Limestone

Question 18. Which region in India is called the storehouse of minerals?

- A. Chota Nagpur Plateau
- B. Deccan Plateau
- C. Himalayan Region
- D. Indo-Gangetic Plains

Answer: A. Chota Nagpur Plateau

Question 19. What is 'Rat-Hole Mining'?

- A. Open-pit mining technique
- B. Illegal mining using narrow tunnels in tribal areas
- C. Quarrying for non-metallic minerals
- D. Mining in ocean beds

Answer: B. Illegal mining using narrow tunnels in tribal areas

Question 20. What is the main health hazard for miners?

- A. Physical injuries from machinery
- B. Pulmonary diseases due to dust and fumes
- C. Poor nutrition
- D. Inadequate ventilation

Answer: B. Pulmonary diseases due to dust and fumes

Question 21. What environmental issue is caused by mining waste?

- A. Increased vegetation
- B. Degradation of land and river pollution
- C. Lowering water table
- D. Formation of new minerals

Answer: B. Degradation of land and river pollution

Question 22. Which mineral is used in electrical industries for its insulating properties?

- A. Mica
- B. Copper
- C. Bauxite
- D. Magnetite

Answer: A. Mica

Question 23. What determines the economic viability of a mineral reserve?

- A. The colour of the mineral
- B. Its proximity to cultural heritage sites
- C. The concentration of minerals in the ore and ease of extraction
- D. The geological age of the mineral

Answer: C. The concentration of minerals in the ore and ease of extraction

Conservation Of Minerals

1. Dependence on Minerals:

- Industries and agriculture are heavily reliant on mineral deposits.
- Workable mineral deposits form only 1% of the Earth's crust.
- Mineral resources are finite and non-renewable.
- Geological processes of mineral formation are slow, making replenishment rates negligible.
- Continuous extraction leads to higher costs and declining quality of ores.

2. Sustainable Use of Minerals:

- Planned and sustainable resource usage is essential.
- Technologies for using low-grade ores at reduced costs need to be developed.
- Recycling metals and using substitutes conserve mineral resources.

3. Energy Resources:

- Energy is essential for cooking, lighting, heating, transportation, and industrial machinery.
- **Energy sources are classified as:**
 - a. Conventional sources:** Coal, petroleum, natural gas, firewood, cattle dung cake, hydel, and thermal electricity.
 - b. Non-conventional sources:** Solar, wind, tidal, geothermal, biogas, atomic energy.

4. Coal:



Fig. 5.9 (b): A view from outside of a coal mine



Fig. 5.9 (a): A view from inside of a coal mine

- India's most abundant fossil fuel, meeting substantial energy needs.
- **Forms of coal:**
 - a. Peat:** Low carbon, high moisture, low heating capacity.
 - b. Lignite:** Low-grade brown coal; reserves in Neyveli, Tamil Nadu.
 - c. Bituminous coal:** Most used commercially; high-grade variant used in iron smelting.
 - d. Anthracite:** Highest quality, hard coal.

- **Coal deposits:**
 - a. Gondwana coal:** Found in Damodar, Godavari, Mahanadi, Son, and Wardha valleys.
 - b. Tertiary coal:** Found in Meghalaya, Assam, Arunachal Pradesh, Nagaland.

5. Petroleum:

- The second major energy source in India.
- Provides fuel, lubricants, and raw materials for industries like textiles, fertilizers, and chemicals.
- **Petroleum occurrences:**
 - a.** Found in anticlines, fault traps, and porous rocks (limestone/sandstone).
 - b.** Major production areas: Mumbai High, Gujarat, Assam.

6. Natural Gas:

- Found with petroleum deposits; used in various industries and as domestic fuel.
- Emerging as a preferred fuel for transport (CNG) and homes (PNG).
- Major reserves: Mumbai High, Cambay basin, Krishna-Godavari basin.
- Infrastructure: The HVJ pipeline links western and northern India.

7. Electricity:

- Index of development due to wide applications.
- **Generated in two ways:**
 - a. Hydro electricity:** Renewable, generated by flowing water.
 - b. Thermal electricity:** Generated using fossil fuels like coal, petroleum, and natural gas.

8. Non-Conventional Sources of Energy:

- Importance due to fossil fuel shortages and environmental concerns.
- Examples: Solar, wind, tidal, biomass, geothermal energy.
- India's largest renewable energy programmes include solar and wind power.

9. Nuclear Energy:

- Generated using uranium and thorium.
- Major reserves: Jharkhand, Rajasthan (Aravalli), Monazite sands in Kerala.
- Six nuclear power stations in India.

10. Solar Energy:

- India's tropical location provides abundant solar energy potential.
- Applications: Rural and remote areas to reduce dependence on firewood and dung cakes.

11. Wind Energy:

- High potential in India.
- Major wind farm clusters: *Tamil Nadu, Gujarat, Karnataka, Maharashtra, Kerala, Lakshadweep.*

12. Biogas:

- Produced from organic waste; it is efficient compared to kerosene and dung cakes.
- Gobar gas plants benefit farmers by providing energy and manure.

13. Tidal Energy:

- Generated using oceanic tides with floodgate dams.
- Potential sites: Gulf of Khambhat, Gulf of Kutch, Gangetic delta in Sunderbans.

14. Geothermal Energy:

- Utilizes Earth's internal heat.
- High geothermal gradient areas: Parvati Valley (Himachal Pradesh), Puga Valley (Ladakh).

Conservation of Energy Resources

1. Energy and Economic Development:

- Energy is essential for economic development.
- Sectors requiring energy:
 - a. Agriculture
 - b. Industry
 - c. Transport
 - d. Commercial
 - e. Domestic
- Economic development plans since Independence have increased energy demand.
- Energy consumption is steadily rising across the country.

2. Need for Sustainable Energy Development:

- A sustainable energy development path is essential due to rising energy demands.
- **Twin strategies for sustainability:**
 - a. Energy conservation
 - b. Increased use of renewable energy sources

3. Energy Efficiency in India:

- India is among the least energy-efficient countries globally.
- Judicious use of energy resources is critical due to their limited availability.

4. Citizen's Role in Energy Conservation:

- Measures for energy conservation:
 - a. Use public transport instead of personal vehicles.
 - b. Switch off electricity when not in use.
 - c. Use power-saving devices.
 - d. Opt for non-conventional energy sources.
- The principle: "***Energy saved is energy produced.***"

MCQ Questions on NCERT Geography Class 10 Chapter 5 | Conservation Of Minerals

Question 1. What percentage of the Earth's crust is made up of workable mineral deposits?

- a) 10%
- b) 5%
- c) 1%
- d) 15%

Answer: c) 1%

Question 2. Why are mineral resources considered non-renewable?

- a) They are renewable only in certain conditions.
- b) The geological process of their formation is very slow.
- c) They are renewable but require high costs.
- d) They are abundant and easy to replenish.

Answer: b) The geological process of their formation is very slow.

Question 3. Which among the following is a suggested step for conserving mineral resources?

- a) Increasing extraction rates
- b) Recycling of metals
- c) Stopping mining activities completely
- d) Increasing reliance on non-renewable resources

Answer: b) Recycling of metals

Question 4. Which of the following is NOT a conventional source of energy?

- a) Firewood
- b) Solar energy
- c) Coal
- d) Petroleum

Answer: b) Solar energy

Question 5. What percentage of rural households in India meet their energy needs through firewood and cattle dung cake?

- a) 50%
- b) 60%

- c) 70%
- d) 80%

Answer: c) 70%

Question 6. Which energy source is considered renewable?

- a) Petroleum
- b) Coal
- c) Hydro-electricity
- d) Natural gas

Answer: c) Hydro-electricity

Question 7. Which type of coal has the highest carbon content and heating capacity?

- a) Lignite
- b) Peat
- c) Bituminous
- d) Anthracite

Answer: d) Anthracite

Question 8. Where are principal lignite reserves located in India?

- a) Assam
- b) Tamil Nadu
- c) Jharkhand
- d) Rajasthan

Answer: b) Tamil Nadu

Question 9. Which coalfield is NOT located in the Damodar Valley?

- a) Jharia
- b) Raniganj
- c) Bokaro
- d) Neyveli

Answer: d) Neyveli

Question 10. Petroleum is typically found in which type of geological formations?

- a) Gondwana rocks
- b) Anticlines and fault traps
- c) Igneous rocks
- d) Floodplains

Answer: b) Anticlines and fault traps

Question 11. Which is the oldest oil-producing state in India?

- a) Gujarat
- b) Assam
- c) Maharashtra
- d) Tamil Nadu

Answer: b) Assam

Question 12. Which pipeline was the first cross-country gas pipeline in India?

- a) HBJ Pipeline
- b) HVJ Pipeline
- c) KG Basin Pipeline
- d) Mumbai-Gujarat Pipeline

Answer: b) HVJ Pipeline

Question 13. Where are India's major gas reserves located?

- a) Cauvery Basin
- b) Mumbai High
- c) Rajasthan
- d) Vindhyan Basin

Answer: b) Mumbai High

Question 14. Which of the following is a renewable source of electricity generation?

- a) Thermal power
- b) Nuclear power
- c) Hydro-electricity
- d) None of the above

Answer: c) Hydro-electricity

Question 15. Which multipurpose project produces hydroelectric power in India?

- a) HVJ Pipeline
- b) Bhakra Nangal
- c) Digboi Refinery
- d) Damodar Valley Corporation

Answer: b) Bhakra Nangal

Question 16. Which Indian state has the largest wind farm cluster?

- a) Gujarat
- b) Tamil Nadu
- c) Maharashtra
- d) Kerala

Answer: b) Tamil Nadu

Question 17. What is the main input for generating biogas?

- a) Petroleum waste
- b) Cattle dung and organic waste
- c) Coal
- d) Uranium

Answer: b) Cattle dung and organic waste

Question 18. Which of the following is a practice for conserving energy?

- a) Using individual vehicles more
- b) Using power-saving devices
- c) Avoiding the use of public transport
- d) Increasing electricity consumption

Answer: b) Using power-saving devices

Question 19. Which slogan promotes energy conservation?

- a) "Energy saved is energy wasted."
- b) "Energy saved is energy produced."
- c) "Consume to conserve."
- d) "More energy, more progress."

Answer: b) "Energy saved is energy produced."

Question 20. What is the twin plank of sustainable energy?

- a) Use of fossil fuels and energy imports
- b) Promotion of energy conservation and renewable sources
- c) Development of nuclear power and coal-based industries
- d) Hydropower generation and increasing thermal power plants

Answer: b) Promotion of energy conservation and renewable sources

Question 21. What happens as mineral extraction increases?

- a) Costs decrease and quality improves
- b) Costs increase and quality decreases
- c) Quality improves but costs remain constant
- d) Both costs and quality remain constant

Answer: b) Costs increase and quality decreases

Question 22. Which of the following technologies can help conserve mineral resources?

- a) Enhanced mining operations
- b) Use of low-grade ores at low costs
- c) Expanding mineral exportation
- d) Increasing fossil fuel usage

Answer: b) Use of low-grade ores at low costs

Question 23. Which type of coal is known as “low-grade brown coal”?

- a) Bituminous
- b) Anthracite
- c) Lignite
- d) Peat

Answer: c) Lignite

Question 24. Which state has significant lignite reserves?

- a) Jharkhand
- b) Tamil Nadu
- c) Assam
- d) Maharashtra

Answer: b) Tamil Nadu

Question 25. Which valley contains major Gondwana coal reserves?

- a) Godavari Valley
- b) Damodar Valley
- c) Brahmaputra Valley
- d) Krishna Valley

Answer: b) Damodar Valley

Question 26. Where are tertiary coal deposits mainly found?

- a) West Bengal
- b) North-eastern states
- c) Gujarat
- d) Maharashtra

Answer: b) North-eastern states

Question 27. What is the main function of petroleum refineries?

- a) Generate Electricity
- b) Supply coal to industries
- c) Act as a nodal industry for various products
- d) Purify natural gas

Answer: c) Act as a nodal industry for various products

Question 28. Which is a major petroleum production area in Gujarat?

- a) Digboi
- b) Ankleshwar
- c) Naharkatiya
- d) Moran

Answer: b) Ankleshwar

Question 29. Which region of India is known for its offshore petroleum fields?

- a) East Coast
- b) West Coast
- c) Southern Plateau
- d) Himalayan region

Answer: b) West Coast

Question 30. What is the full form of the HVJ pipeline?

- a) Hazira-Vizag-Jodhpur
- b) Hazira-Vijaipur-Jagdishpur
- c) Hyderabad-Vijayawada-Jamnagar
- d) Hosur-Valapadi-Jalgaon

Answer: b) Hazira-Vijaipur-Jagdishpur

Question 31. Which basin on the East Coast is a new reserve of natural gas?

- a) Cauvery Basin
- b) Krishna-Godavari Basin
- c) Ganga Basin
- d) Mahanadi Basin

Answer: b) Krishna-Godavari Basin

Question 32. Which type of electricity generation is non-renewable?

- a) Hydro-electricity
- b) Solar power
- c) Thermal power
- d) Wind power

Answer: c) Thermal power

Question 33. What is considered an index of development?

- a) Per capita income
- b) Per capita consumption of electricity
- c) Per capita mineral extraction
- d) Per capita fossil fuel usage

Answer: b) Per capita consumption of electricity

Question 34. Which region in India is known for tidal energy potential?

- a) Gangetic plains
- b) Gulf of Khambhat
- c) Vindhyan range
- d) Western Ghats

Answer: b) Gulf of Khambhat

Question 35. Which renewable energy source is generated by decomposing organic matter?

- a) Tidal energy
- b) Geothermal energy
- c) Biogas
- d) Solar energy

Answer: c) Biogas

Question 36. What is a significant characteristic of geothermal energy?

- a) Produced from tidal flows
- b) Uses the Earth's internal heat

- c) Depends on sunlight
- d) Derived from wind energy

Answer: b) Uses the Earth's internal heat

Question 37. Which state is home to the Parvati Valley geothermal energy project?

- a) Jammu & Kashmir
- b) Himachal Pradesh
- c) Uttarakhand
- d) Ladakh

Answer: b) Himachal Pradesh

Question 38. Which of the following is a measure to promote energy conservation?

- a) Increasing fossil fuel consumption
- b) Using public transport
- c) Avoiding power-saving devices
- d) Building more thermal plants

Answer: b) Using public transport

Question 39. What is India's position in terms of energy efficiency globally?

- a) Among the most energy-efficient countries
- b) Among the least energy-efficient countries
- c) At an average level of energy efficiency
- d) Unranked globally

Answer: b) Among the least energy-efficient countries

Question 40. Which non-conventional energy source is highly suitable for remote and rural areas in India?

- a) Hydro-electricity
- b) Solar energy
- c) Nuclear energy
- d) Petroleum

Answer: b) Solar energy



Thank You 🥰