

Geography Class 10 Important Question Chapter 5 Minerals and Energy Resources

1. How minerals are formed in sedimentary rocks? Name any two mineral formed due to evaporation especially in arid region.

Ans. A. In sedimentary rocks a number of minerals occur in beds and layers.

B. They have been formed as a result of deposition, accumulation and concentration in horizontal strata.

C. Coal and some forms of iron ore have been concentrated as a result of long periods under great heat and pressure.

D. Another group of sedimentary minerals include gypsum, potash salt and sodium salt. These are formed as a result of evaporation especially in arid region.

2. Explain with an example that aluminum was widely used by the emperors of France.

Ans. A. After the discovery of aluminium Emperor Napoleon III wore buttons and hooks on his clothes made of aluminium.

B. Food was served to his more illustrious guests in aluminium utensils and the less honorable ones were served in gold and silver utensils.

C. Thirty years after this incident aluminium bowls were most common with the beggars in Paris.

3. Name any one rock mineral. Write about its formation. Name the industry in which it is used?

Ans. A. Limestone is a rock mineral.

B. It is found in association with rocks composed of calcium carbonate or calcium and magnesium carbonates.

C. It is found in sedimentary rocks of most geological formations.

D. Limestone is the basic raw material for cement industry and essential for smelting iron ore in the blast furnaces.

4. Can you illustrate some suggestions to conserve minerals?

Ans. A. A concerted effort has to be made in order to use our mineral resources in a planned and sustainable manner.

B. Improved technologies need to be constantly evolved to allow use of low grade ores at low costs.

C. Recycling of metals, using scrap metals and other substitutes are steps in conserving our minerals resources for future.

5. Toothpaste is a combination of various Minerals". Support the statement with suitable examples.

Ans. Yes, toothpaste is a combination of so many minerals. Toothpaste cleans our teeth. Abrasive minerals like silica, limestone, aluminum oxide and various phosphate minerals do the cleaning. Fluoride which is used to reduce cavities, come from a mineral fluoride. Most toothpaste is made white, with titanium oxide, which comes from minerals called rutile, ilmenite and anatase. The sparkle in some toothpaste comes from mica. The toothbrush and tube containing the paste are made of plastics from petroleum.

6. What is the difference in approach of Geographers and Geologists in the study of mineral resources?

Ans. Geographers study minerals as part of the earth's crust for a better understanding of land reforms. The Distribution of minerals resources and associated economic activities are interest to geographers.

Geologists, however, is interested in the formation of minerals, their age and physical and chemical composition.

7. Distinguish between metallic Minerals and Non Metallic Minerals.

Ans. Metallic Minerals

1. Minerals from which metals are extracted.
2. They can be pressed in to wires or sheets.
3. Iron gold silver are metallic minerals

Non-Metallic Minerals

1. Minerals consist of non-metals.
2. They cannot be pressed in to wires or sheets
3. Clay, Sulphur, coal, potash are all non metallic minerals.

8. How do decomposition and weathering influence formation of minerals? Name a mineral formed due to decomposition and weathering?

Ans. A. This type of formation involves the decomposition of surface rocks under the effect of pressure, temperature and humidity.

B. Due to weathering effects of wind and water the soluble constituents, leaving a residual mass of weathered material containing ores.

C. Bauxite is formed this way.

9. What is the contribution of coal in the installed capacity of electricity? Why is the share of coal continuing to be highest?

Ans. A. 62% is the contribution of coal in the installed capacity of electricity.

B. The share of coal is continuing to be highest because of the following facts.

1. India has a huge resource of coal of different kinds, such as anthracite, bituminous, lignite and peat.
2. The potential of India in the field of hydel power is quite high but only one sixth has been derived developed.
3. Electricity produced by nuclear plants is only in the initial stages. This way is not properly developed.

10. Outline the uses of Energy? Explain the different sources of energy resources.

Ans. Uses: Energy is required for all activities. It is needed to cook, to provide light and heat, to propel vehicles and to drive machinery in Industry.

Sources of Energy:

- a. Energy can be generated from non conventional sources include- solar energy, wind, tidal, geothermal, bio gas and atomic energy.
- b. Energy is also generated from conventional sources include-firewood, cattle dung cake, coal, petroleum, natural gas and electricity both hydel and thermal.

11. Why the use of fire wood and dung cake should be discouraged?

Ans. A. Fire wood and dung cattle dung cake are most common in rural India.

B. According to one estimate more than 70 per cent energy requirement in rural households is met by these two.

C. Continuation of these is increasingly becoming difficult due to decreasing forest area,

D. Moreover using dung cakes too is being discouraged because it consumes most valuable manure which could be used in agriculture.

12. How would you classify the types of coal on the bases of geological ages?

Ans. A. Gondwana Coal Fields: The Gondwana coal fields are 250 million years of age. The major resources of gondwana coal which are metallurgical coal are located in Damodar valley (West-Bengal-Jharkhand). Jharia, Raniganj, Bokaro and important coal fields. The Godavari, Mahanadi, son and Wardha valleys also contain coal deposits.

B. Tertiary Coal Fields: The Tertiary coal fields are only 55 million years old. Tertiary coals occur in the north eastern states of Meghalaya, Assam, Arunachal Pradesh and Nagaland.

13. Write a short note on HVJ Pipeline.

Ans. The HVJ pipeline is Hazira-Vijaipur-jagdishpur pipeline. It is 1700 km long. This pipeline links Mumbai High and Bassien with fertilizer, power and industrial complexes in western and northern India. This artery has provided an impetus to India's gas production. The power and fertilizer industries are the key users of natural gas. Use of Compressed Natural Gas for vehicles to replace liquid fuels is gaining wide popularity in the country.

14. Write about the formation of Tidal energy.

Ans. A. Oceanic tides are used to generate electricity.

B. Floodgates dams are built across inlet. During high tide water flows into the inlet and gets trapped when the gate is closed.

C. After the tide falls outside the flood gate, the water retained by the floodgate, the water retained by the floodgate flows back to the sea via pipes that carries it through a power-generating turbine.

15. How the people of rural areas get benefited from the setting up of biogas plants?

Ans. A. Shurbs, farm waste, animal and human waste are used to produce biogas for domestic consumption in rural areas.

B. The plants using cattle dung are known as Gobar gas plants in rural areas.

C. Theses provide twin benefits to the farmer of rural areas in the form of energy.

D. Farmers also get improved quality of manure.

E. Bio gas is far the most efficient use of cattle dung.

F. It also prevents the loss of trees and manure due to burning of fuel wood and cow dung cakes.

16. Explain the different uses of mineral oil.

- Ans.** A. Petroleum is a mineral oil is the next major energy source in India after coal.
B. It provides fuel for heat and lighting, lubricants for machinery and raw materials for a number of manufacturing industries.
C. Petroleum refineries act as a nodal industry for synthetic textile, fertilizers and numerous chemical industries.

17. How would you explain the occurrence of petroleum in India?

- Ans.** A. Most of the petroleum occurrences in India are associated with anticline and fault traps in the rock formations of the tertiary age.
B. In regions of folding, anticlines or domes, it occurs where oil is trapped in the crest of the up fold.
C. The oil bearing layer is a porous limestone or sand stone through which oil may flow.
D. The oil is prevented from rising or shrinking by intervening non-porous layers.

18. Write any two features of natural gas. Why is it considered an environment friendly fuel?

- Ans.** A. Natural gas is an important clean energy resource found in association with or without petroleum.
B. It is used as a source of energy as well as an industrial raw material in the petrochemical industry.
C. Natural gas is considered an environment friendly fuel because of low carbon dioxide emission and is, therefore the fuel for the present country.

19. Can you explain the natural gas reserves of India?

- Ans.** A. Large reserves of natural gas have been discovered in the Krishna-Godavari basin.
B. Along the west coast the reserves are supplemented by finds in the Gulf of Cambay.
C. Andaman and Nicobar islands are also important areas having large reserves of natural gas

20. Name the type of energy whose per capita consumption is considered as an index of development. Explain the different ways by which this type of energy resource is generated.

Ans. Electricity has such a wide range of application in today's world that, its per capita consumption is considered as an index of development. Electricity is generated mainly in two ways:

- A. Hydro electricity: Hydro electricity is generated by running water which drives hydro turbines to generate hydro electricity. It is renewable resource of energy.

B. Thermal Power: It is generated by burning other fuels such as coal, petroleum and natural gas to drive turbines to produce thermal power.

21. Write about the composition and formation of limestone. What are the uses of it?

Ans. Composition: Limestone is found in association with rocks composed of calcium carbonates or calcium and magnesium carbonate.

Formation: It is found in sedimentary rocks of most geological formation.

Uses: Limestone is the basic raw material for the cement industry and essential for iron ore in the blast furnace.

22. What are the Petroleum producing areas in India. Explain.

Ans . Most of the petroleum producing areas in India are associated with anticlines and faults traps in the rock formations of the tertiary age. In the region folding, anticlines or domes, it occurs where oil is trapped in the crest of the upfold. Petroleum is also found in fault traps between porous rocks.

Major petroleum producing areas of India are ...

- 1) ASSAM- Digboi, Naharkatia, Moran-Hugrijan, Namdang region
- 2) GUJRAT- Ankeleshwar, Lunez, Navgan
- 3) MUMBAI HIGH
- 4) Godavari – Mahanadi basin

23. Distinguish between Natural Gas and Bio Gas.

Ans. NATURAL GAS

- It is a mixture of combustible gaseous hydrocarbons occurring in the rocks of earth crust.
- This is commercial energy.
- It is used as raw material in the petrochemicals.
- It is transported from one place to another through pipeline.
- Mostly used in urban areas.

BIO GAS

- It is derived by decomposition of waste of animals and plants with the help of microorganism in presence of water.
- Non commercial energy
- It is produced in tanks
- It is found in rural areas

24. What is Non – Conventional sources of energy? Discuss two sources of such types of energy.

Ans. Sources of energy which are renewable, eco-friendly and newer one are called non conventional sources of energy i.e. wind energy, geothermal energy, tidal energy etc.

GEOTHERMAL ENERGY:

Geothermal energy refers to the heat and electricity produced by using the heat from the interior of the earth. Where the geothermal gradient is high , high temperature is found at shallow depth . There are several hot springs in India which could be used to generate electricity. Two projects, one is MANIKARAN in Himachal and second in PUGA VALLEY in Ladakh has been set up in India to harness Geothermal energy.

TIDAL ENERGY:

Oceanic tides can be used to generate electricity .During high tides water flows into the inlet and get trapped when it is closed. After the fall of tide the water flows back to the sea via pipe lines that carry it through power generating turbines. In India gulf of Kutch provides ideal conditions for tidal energy.

25. India now ranks as a “WIND SUPER POWER “in the world. Why?

Ans. • India gets advantage of trade winds, western lies and monsoon winds.

- Wind energy completely pollution free and non exhaustible that's why it becomes popular.
- India has an ambitious program to install 250 wind driven turbines with total capacity of 45 mega watts spread over 12 suitable locations.
- India's potential wind power generation is of 50000 megawatts of which $\frac{1}{4}$ can be easily harnessed.
- Rajasthan, Gujarat, Maharashtra, Karnataka and Tamil Nadu have favorable conditions for wind energy. Wind power plant at LAMBA in Gujarat, is the largest in Asia.

26. How can we conserve energy resources in India? Explain.

Ans. Following efforts can be made to conserve energy resource in India:

- i. Using public transport instead of individual vehicles.
- ii. Switching of electricity when not in use.
- iii. Using power saving devices.
- iv. More and more use of non conventional source of energy as they are renewable and eco-friendly.
- v. In automobiles electrical motors should be introduced.
- vi. Intensified exploration and research of new sources of energy

