

Geography

Mineral and Energy Resources.

Q. 1. Suggest measures for the conservation of energy resources.

Ans. Measures for the conservation of energy resources are -

- use more public transport system.
- Switch off electricity whenever not required.
- Use Power-Saving devices.
- Check the power equipment regularly.
- Emphasise on greater use of non-conventional sources of energy.

Q. 2. Distinguish between renewable and non-renewable resources, giving five points of distinction.

Renewable Resources →

- These can be renewed or reproduced by physical, chemical or mechanical processes.
- These get renewed over a short period of time.
- Also known as replenishable resources.
- These are divided into continuous and flow.
- Examples: water, wind, forests, wildlife and soil.

Non-Renewable Resources →

- These occur over a very long period of time.
- These are limited in availability.
- These are exhaustible.
- These are divided into recyclable and - non recyclable.
- Examples: minerals and fossil fuels.

Q.3. What are the main uses of limestone? Mention any two states which are the major producers of limestone.

Ans. ① It is a basic raw material for cement industry.
 ② It is essential for smelting iron ore in blast furnace.

Two leading producers are - Andhra Pradesh and Madhya Pradesh.

Q.4. How do minerals occur in igneous and metamorphic rocks?

Ans. In igneous and metamorphic rocks, minerals may occur in the cracks, crevices, faults or joints. The smaller occurrences are called veins and the larger ones are called the lodes. In most cases, they are formed when minerals in liquid/molten and gaseous forms are forced upward through cavities toward's the earth's surface. They cool and solidify as they rise. Major metallic minerals like tin, copper, zinc and lead etc. are obtained from veins and lodes.

Q.5. How do minerals occur in sedimentary rocks?

- 1) In sedimentary rocks, a number of minerals occur in beds and layers.
- 2) They have been formed as a result of deposition, accumulation and concentration in horizontal strata.
- 3) Coal and some forms of iron ore have been concentrated as a result of long periods of under great heat and pressure.
- 4) Another group of sedimentary minerals include gypsum, potash, salt and sodium.

salt. These are formed as a result of evaporation especially in arid regions.

Q.6 Explain the classification of minerals.

1. Metallic minerals →

Metals are obtained from these minerals, ores of iron, copper, gold, silver, lead, aluminum, tin etc. are important examples of metallic minerals. Metallic minerals can further be divided into ferrous and non-ferrous.

(a) Ferrous minerals - Those minerals which contain iron ore are known as ferrous minerals. Iron ore, manganese, nickel, cobalt etc. are some of the important ferrous minerals.

b) Non-ferrous minerals: Minerals containing metals other than iron ore are known as non-ferrous minerals. Gold, silver, platinum etc. are called non-ferrous minerals.

(c) Precious minerals: The minerals which have very high economic value are known as precious minerals for example gold, silver, platinum etc.

2. Non-Metallic minerals → These are those minerals which do not contain metals. Coal, petroleum, mica, manganese are some important non-metallic minerals. Oil and coal are non-metallic minerals and are also called energy minerals. There is deficiency of copper, lead, zinc and gold.

3. Energy resources → The mineral which provide energy or power are known as energy minerals are found which contains minerals. Coal, petroleum and natural gas are the most important energy minerals.

Q.7. Explain the distribution of mineral-oil in India.

Ans. Assam. Assam is the important oil producing state of India. Major oil fields of Assam are.

I.) Digboi: It is located in the ^{the} It is the oldest coal field of India.

Rudrasagar, Sib Sagar and Moran Hugrikan are other fields of ^{Assam.}

II.) The Noharkatiya: It is located in the south-west of Digboi.

III.) Oil fields in western India: This includes the oil fields of Gujarat and the offshore oil fields of Mumbai High.

Gujrat: Gujrat produces 18% of the total oil production of India. Ankleshwar, Khambar, Ahmedabad and Kalol fields are the major oil fields of Gujrat.

Off-shore oil fields: The largest mineral oil deposits of India are found in the off-shore sea near Mumbai High (637). It is located in the continental shelf of the coast of Maharashtra about 176 km. north-west of Mumbai.

Q.8. What is solar energy? Write its three characteristics.

Ans. The energy obtained from the sun in the form of heat or electricity is called solar energy.

Characteristics of solar energy:

- 1) Solar energy is freely available on the earth.
- 2) It does not cause any pollution to the environment.
- 3) It is a non-conventional source of energy.

Q.9. Name two important varieties of iron-ore?

1. Magnetite: This is the best of iron ore and contains about 72% iron. It has excellent magnetic qualities, especially valuable in the electrical

industry.

2. Haematite: - It is the most important industrial iron-ore in terms of quantity used. It contains 60% to 70% of pure iron.

Q. 10. What is H.B.I.?

Ans. H.B.I. (Hazira-Bijapur-Jagdishpur) is a gas pipeline which links Mumbai High and Bassien with the fertilizer, power and industrial complexes in western and northern India.

Q. 11. Write the various uses of aluminium. Name the ore of aluminium which state is the leading producer of aluminium ore?

Ans. Aluminium is obtained from bauxite. Odisha is the largest bauxite producing in India with 45% of the country's total production.

1) It is used in the making of utensils like pots and pans because it is a good conductor of heat.

2) It also conducts electricity well and is used to make electrical wires.

3) Aluminium is used to make cans for various beverages and other liquids.

4) It can be converted into a thin foil that is used for wrapping food items for storage.

5) It is strong and light in weight, hence widely used in aircrafts and spacecrafts.

Q. 12. What is Geothermal energy? Name any two projects which have been set up to harness geothermal energy in India.

Ans. - Geothermal energy refers to the heat and electricity produced by using the heat from the interior of

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the earth.

Geothermal energy exists because the earth grows progressively hotter with increasing depth. Where the geothermal gradient is high, high temperature is found at shallow depth. Ground water in such areas absorbs heat from the rocks and becomes hot. It is so hot that when it rises to the earth's surface it turns into steam. This steam is used to drive turbines and generate electricity.

Two experimental projects have been set up in India to harness geothermal energy. One is located in the Parvati Valley near Manikarn in Himachal Pradesh and the other is located in the Luga valley, Ladakh.

Q13. "Nuclear energy is the hope of future." Discuss the statement by giving ^{three} five points.

Ans.

Nuclear Energy: It is energy which is obtained from the nucleus of an atom. The nuclear energy is going to play a vital role because:-

1. Since the demand for energy is increasing day by day, the natural energy sources like coal, petroleum, etc, cannot last for long time. So the nuclear energy will dominate.
2. It also releases enormous amount of energy.
3. Nuclear power is very economical.

Main minerals -

- 1) Uranium
- 2) Thorium.

Uranium mines are located in the Singhbhum district of Jharkhand.

Q.14. What are the four types of coal? Write one main characteristic of each and write the importance of Coal in the manufacturing industries.

Ans. Coal

1. Anthracite: It is the best quality and contains more than 80% of quality Carbon.
 2. Bituminous: It is one of the most widely used variety of coal, and contains 60-80% of carbon.
 3. Lignite: It is of lower grade and is known as brown coal.
 4. Peat: It is of low quality so it burns like wood and gives more smoke and less heat.
- 1) Coal is the major source of energy in many industries.
 - 2) It is used for power generation, to supply energy to industry as well as for domestic need.
 3. It is a basic input in the making of iron and steel.
 4. It is also used in cosmetic and cement industry.

Q.15. What are the uses of copper? Explain the distribution of copper in India?

Ans. 1. It is a good conductor of electricity so it is used for making electric wires.

2. It is used in electronic industry

3. Due to malleability it is used in various industries.

Distribution →

1. Madhya Pradesh → Madhya Pradesh is the leading producer of Copper in India. The state has rich reserves in Balaghat district which produces 52% of India's Copper. Kherlibazar - Bargaon area of Betul district also has good reserves.

2. Rajasthan → Most of the Copper reserves of Rajasthan are found along the Aravali range. The Khetri -

Singhania belt in Singhbhum district is the most important copper producing area. The Kho-Dariba and Dilwara Kirovali region is another important area.

3. Jharkhand : Singhbhum, Hazaribagh and Chaibasa districts are the major producers.

Q16

Write the distribution of coal in India.

Ans. In India coal occurs in rock series of two main geological ages, namely Gondwana, a little over 200 million years in age and in tertiary deposits which are only about 55 million years old. The major sources of Gondwana Coal, which are metallurgical coal are located in Damodar valley (West Bengal-Jharkhand). Jharia, Raniganj, Bokaro are important coal fields. The Godavari, Mahanadi, Son and Wardha valleys also contains coal deposits.

Tertiary Coals occur in the north eastern states of Meghalaya, Assam, Arunachal Pradesh and Nagaland.

Q17. "There is a pressing need to use renewable energy sources". Explain.

Ans.

1) Over dependency on fossil fuels:-

The growing consumption of energy has resulted in the country becoming increasingly dependent on fossil fuels such as Coal, oil and gas.

2) Slow rate of formation → The rate of formation of renewable sources of energy is very slow but these are being consumed at a very fast rate. So there is a fear that our world may face energy crisis.

3. Environmental pollution: - Increasing use of fossil fuels also causes serious environmental problems. The use of fossil fuels release harmful gases like carbon dioxide, sulphur dioxide etc.

4. Abundance of renewable energy resources: - India is blessed with an abundance of sunlight, water, wind and biomass.

Q.18. Write a note on Hydro-electricity and Thermal electricity.

Hydro-electricity is generated by fast flowing water, which is renewable resource. India has a number of multi-purpose projects like the Bhakra Nangal, Damodar valley corporation, the Kopili Hydel project etc. producing hydroelectric power.

Thermal electricity is generated by using coal, petroleum and natural gas. The thermal power stations use non-renewable fossil fuels for generating electricity. There are over 310 thermal power plants in India.

Q.19. Define biogas

Ans. Energy produced by using shrubs, farm waste, animal and human wastes is called biogas.

Q.20. Write about major iron ore fields in India.

Ans. 1. Orissa-Jharkhand Belt: In Orissa high grade hematite haematite ore is found in Badampahar mines in the Mayurbhanj and Kendujhar districts. In the adjoining ^{hi} Singhbhum district of Jharkhand Haematite iron ore is mined in Gua and Noamundi.

- Q. 2. Durg-Bastar and Chandrapur belt lies in Chhattisgarh and Maharashtra. Very high grade hematites are found in the famous Bailadila range of hills in the Bastar district of Chhattisgarh. The range of hills comprise of 14 deposits of super high grade hematite iron ore.
3. Bellary-Chitradurga-Chikmaglur-Tumkur belt in Karnataka has large reserves of iron ore. The Kudremukh mines located in the western Ghats of Karnataka are a 100 percent export unit. Kudremukh deposits are known to be one of the largest in the world.
4. Maharashtra-Goa belt → includes the states of Goa and Ratnagiri district of Maharashtra.

Q.21. What is the importance of minerals?

Ans. Minerals become an important part of modern economies.

1. Almost every thing we use, from a tiny pin to a towering building all are made from minerals.
2. The country earns income from the export of minerals.
3. Provide employment to the people engaged in mining and extraction of minerals.
4. Minerals like coal and petroleum are the main source of power.

Q.22 Famous Mines -

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|-------------|-----------|
| Kolar - | Gold mine |
| Khetri - | Copper |
| Bailadila - | Iron ore. |
| Kudremukh - | Iron ore. |

