10. Minerals and Energy Resources

Very Short Answer

1. Question

In what forms, Indian mineral is classified?

Answer

The minerals are classified into two major categories:

1. Metallic minerals

2. Non-metallic minerals

1. <u>Metallic minerals</u>:

Minerals that show metallic properties are known as metallic minerals. They are further classified into Ferrous and non-ferrous minerals.

<u>Ferrous minerals</u>:

Minerals that are rich in iron are called Ferrous minerals. Example – Chromite, pyrite, tungsten, cobalt, etc.

<u>Non-Ferrous minerals</u>:

Minerals that do not contain iron are called Non-Ferrous minerals. Example – Gold, silver, copper, etc.,

2. <u>Non-metallic minerals</u>:

Minerals that do not have metallic properties are called non-metallic minerals.

Example – Dolomite, mica, gypsum, etc.,

2. Question

Which are fuel mineral of India?

Answer

The minerals which can be used as fuels and in the production of fuels are called fuel minerals.

Example – Coal, petroleum, natural gas, etc.,

3. Question

What do you mean by mineral?

Answer

Minerals are naturally occurring substances which have fixed internal structure and definite physical and chemical properties. They are obtained through various methods of extraction such as mining.

4. Question

Which types of iron ores are found in India?

Answer

Iron ores are obtained from sedimentary rocks. These ores are the strong base for the industrial development of India. There are five types of iron ores found in India. They are:

a. Haematite

b. Magnetite

c. Limonite

d. Siderite and

e. Laterite.

5. Question

In which districts fuel minerals are found in Rajasthan?

Answer

Minerals that are used as fuels are called fuel minerals. Coal and petroleum are some of the fuel minerals.

Lignite coal is found abundantly in Kapuradi, Jalippa, Giral, Bhadkha, Gunga, and Shiva of Barmer district. It is also available in other places like Medta, Kuchera, Kasnau and Matasukh in Nagaur, Barsingser, Palana, Gudha, Bithnok of Bikaner.

Petroleum reserves are found in Bikaner, Barmer, Jaisalmer and Ganganagar districts.

6. Question

Which mica ores are found in India?

Answer

Mica is found in abundance in India. The two types of mica ores found in India are:

a. Muscovite and

b. Biotite

Muscovite is also called as White Mica whereas Biotite is called as Pink Mica.

7. Question

Which are atomic minerals?

Answer

Atomic minerals are those which contains radioactive elements. These are non-fossil minerals and are a type of energy minerals.

Example – Uranium, thorium, limenite, etc.

8. Question

What do you mean by fossil mineral?

Answer

Fossil minerals are those which are formed by the physical and chel reaction of the remains of the plants and animals which are deposited on the layers between the rocks.

Example – Petroleum and Natural gas.

Short Answer

1. Question

Explain the distribution of iron ore in India.

Answer

India is the second largest producer of iron in the world. Iron ores are obtained from Sedimentary rocks. Haematite, limonite, siderite, magnetite, and laterite are the five types of iron ores found in India.

The distribution of iron ore in India are as follows:

1. Odisha:

Haematite rich iron ores are found in Odisha which accounts for twenty-eight percent of total iron production in the country. Mayurbhanj, Sundergarh and Kyojhar, Mayurbhanj, Gurumahisini, Sulempet, Badampahar, Thakurani, Kiruburu are the districts in Odisha where iron ore is found.

2. Karnataka:

About twenty-six percent of the iron ore rich in haematite is from Karnataka. Bellary, Chikmangloor, Chitradurg and Shimoga districts have abundant iron ores.

Bababudan hills, Kalahandi, Kemangudi, are the important centres of iron ore production in the district of Chikmangloor

3. Goa:

About 13.5% of the country's iron ore is obtained from Goa. Goa is the fourth largest producer of iron ore in India. Limonite, laterite, and siderite are the types of iron ores found here.

In Goa, iron ore is found in Pirna, Adel, Kadnem Surla, Vale Aneda, Tosilla Borgador areas.

4. Jharkhand:

Jharkhand is rich in magnetite and haematite iron ores and is fifth in the production of iron ore in India. Singhbhum and Palamu districts, Noamundi, Gua, Daltonganj, are the areas from which iron ore is obtained.

5. Chattisgarh:

Chattisgarh accounts for 16% of the country's total iron ore production. This state is rich in Haematite. Dantewara, Bilaspur, Rajnandgaon, Dhalli, Rajhara range, Jagdalpur, Raoghat are the regions that are rich in iron ore. Belladila mine is the largest iron mine of Asia.

Iron ores can also be found in the state of Telangana, Salem district in Tamil Nadu, Mahendra Garh in Haryana and Jaipur, Udaipur and Bhilwara in Rajasthan.

2. Question

Describe the contribution of mineral to the Indian economy.

Answer

Minerals are the indispensable part of the Indian economy. It can be clearly understood from the following:

a. Minerals form the basis for the raw materials to the secondary and tertiary sector of the Indian economy. Machines that produce goods are made up of minerals. Again, these goods are transported to different places through various modes of transport. These modes of transport use petrol or diesel as a fuel. Thus, it helps in the development of trade and commerce which contributes to the Indian economy.

b. Modern day agriculture involves the use of modern machinery like a combine harvester, tractor, thresher, etc., which is made up of minerals. Thus, minerals indirectly help to increase agricultural productivity thus increasing the Gross Domestic Production.

c. Natural gas is used as Liquefied Petroleum gas in households, and thus it has got the economic significance.

d. The standard of living of the people can be determined by per capita income, and use of modern machines like television, washing machine, dishwasher, etc., The making and functioning of these machines is not possible without minerals. If the standard of living increases, the economy of the country also increases.

e. Minerals play a significant role in urbanization. Modern constructions are done using tin, concrete, and glass which are made of minerals. This again contributes to the Indian economy.

f. Synthetic fibres are made out of coal or petroleum molecules. These fibres are replacing the natural ones on a large scale. Clothes made using synthetic fibres are even exported to other countries which fetch foreign income thus boosting the Indian economy.

g. The mining industry contributes nearly 10 to 12 per cent of the Gross Domestic Production of the industrial sector. The fact that this is a big boost to the economy cannot be denied.

Moreover, the export of mineral ores also makes a significant contribution to the Indian economy.

Minerals which are directly or indirectly used in our day to day life thus play a significant role in the development of Indian economy.

3. Question

Explain the distribution of mica mineral in India.

Answer

India tops in the world in the production of mica. The two types of mica ores found in India are:

a. Muscovite and

b. Biotite

Muscovite is also called as White Mica whereas Biotite is called as Pink Mica.

Some blocks of mica are found in:

1. Nellore, Guntur, Kadapa – Andhra Pradesh

2. Bhilwara, Ajmer, Jaipur, Udaipur, Tonk – Rajasthan

3. Hazaribagh, Kodarma, Giridih, Dhanbad, Bokaro, Palamau – Jharkhand.

4. Gaya, Begusarai, Navada - Bihar

Petroleum is a fossil fuel. It is obtained from Sedimentary rocks below the surface of the earth. The states of Maharashtra, Gujarat, Rajasthan, and Gujarat accounts for nearly ninety percent of the country's petroleum production.

Petroleum reserves are located at Brahmaputra and Surma Valleys of Assam, Sunderban delta of West Bengal, eastern coastal areas of Odisha, Rajasthan, Saurashtra, Central and northern parts of Gujarat, Krishna-Godavari basin and Cauvery basin.

The crude oil which is obtained gets refined to form petrol, kerosene, and diesel in twenty-four refineries at Guwahati, Vadodara, Haldiya, Mathura, Digboi and Jamnagar. Digboi is the oldest refinery in India.

4. Question

Explain the distribution of lead and zinc in India.

Answer

Lead and Zinc is obtained from Galena ore. The sedimentary rocks of the Aravalli ranges are rich in this ore.

Chittor, Rajsamand, Bhilwara and Udaipur districts of Rajasthan accounts for nearly ninety-five percent of lead and zinc. The rest is obtained from states like Andhra Pradesh, Jharkhand, Odisha, and Tamil Nadu.

These two minerals are refined at Zavar mine in Udaipur.

5. Question

Explain the distribution of copper in India.

Answer

Copper is one of the non-ferrous minerals available in India. This mineral is extracted from Sulphite and Chalcopyrite. This mineral ore is obtained the metamorphic rocks in Dharwar and Aravalli ranges. Nearly ninety-five percent of copper is distributed in the areas of Balaghat and Betul in Madhya Pradesh, Singhbhumi and Hazaribagh districts of Jharkhand, Jhunjhunu, Alwar, Udaipur, Rajsamand in Rajasthan, Guntur and Kurnool in Andhra Pradesh, Chitradurg from Karnataka.

Some of the important copper mines in India are Kolihan, Mendhan, Mosabani and Rakha mines.

In India, the right to refine copper is vested with the Hindustan Copper Limited.

6. Question

Explain the distribution of lignite coal Rajasthan.

Answer

India is the third largest producer of coal in the world. Depending on the carbon content, coal can be classified into Anthracite, bituminous, Lignite and Peat.

Lignite coal which is available in Rajasthan is obtained from the limericks. This lignite coal is found abundantly in the areas of Kapuradi, Jalippa, Giral, Bhadkha, Gunga, and Shiva of Barmer district. It is also available in other places like Medta, Kuchera, Kasnau, and Matasukh in Nagaur, Barsingser, Palana, Gudha, Bithnok of Bikaner.

Long Answer

1. Question

Explain the distribution of iron ore in India.

Answer

India is the second largest producer of iron in the world. Iron ores are obtained from Sedimentary rocks. Haematite, limonite, siderite, magnetite, and laterite are the five types of iron ores found in India.

The distribution of iron ore in India are as follows:

1. Odisha:

a. The state of Odisha accounts for about twenty-eight percent of the total iron produced in the country.

b. It is rich in Haematite.

c. Mayurbhanj, Sundergarh and Kyojhar, Mayurbhanj, Gurumahisini, Sulempet, Badampahar, Thakurani, Kiruburu are the districts in Odisha where iron ore is found.

2. Karnataka:

a. Karnataka produces about twenty-six percent of the country's total iron.

b. This state is rich in Haematite.

c. Bellary, Chikmangloor, Chitradurg and Shimoga districts have abundant iron ores.

d. Bababudan hills, Kalahandi, Kemangudi are the important centres of iron ore production in the district of Chikmangloor.

3. Goa:

a. About 13.5% of the country's iron ore is obtained from Goa.

b. Goa is the fourth largest producer of iron ore in India.

c. Limonite, laterite and siderite are the types of iron ores found here.

d. In Goa, iron ore is found in Pirna, Adel, Kadnem Surla, Vale Aneda, Tosilla Borgador areas.

4. Jharkhand:

a. Jharkhand ranks fifth in the production of iron ore in India.

b. Magnetite and haematite ores are found in abundance.

c. Singhbhum and Palamu districts, Noamundi, Gua, Daltonganj are the areas from which iron ore is obtained.

d. The iron ore is refined in Kulti and Burnpur plants.

5. <u>Chattisgarh:</u>

a. Chattisgarh accounts for 16% of the country's total iron ore production.

b. This state is rich in Haematite.

c. Dantewara, Bilaspur, Rajnandgaon, Dhalli, Rajhara range, Jagdalpur, Raoghat are the regions that are rich in iron ore.

d. Belladila mine is the largest iron mine of Asia.

Besides these states, iron ores can also be found in the state of Telangana, Salem district in Tamil Nadu, Mahendra Garh in Haryana and Jaipur, Udaipur and Bhilwara in Rajasthan.

2. Question

Describe the contribution of mineral in the Indian economy.

Answer

Minerals form a part of raw materials to various sectors of the Indian economy. Minerals are the basis of the machinery. Industries cannot manufacture without machinery.

a. Modern day agriculture involves the use of modern machinery like a combine harvester, tractor, thresher etc., which is made up of minerals. Thus, minerals indirectly help to increase agricultural productivity thus increasing the Gross Domestic Production.

b. The by-products of fossil minerals like crude oil, i.e., petrol and diesel as used as fuels for transport and thus help in the transportation of goods and services from one place to another. Thus, these minerals help in the marketing of goods which increases the economy of a country.

c. Natural gas is used as Liquefied Petroleum gas in households and thus it has got the economic significance.

d. The economic development of a country can be measured using Per Capita Income. Per Capita Income is associated with the standard of living of an individual. Standard of living is also measured according to the usage of modern machines like refrigerators, television, washing machine, etc., The manufacturing and running of these are impossible without minerals.

e. Houses are built using concrete; roofs are built using a tin sheet or asbestos sheet for which minerals form the base. Hence, the construction industry

uses minerals considerably which again contributes to economic development. It is understood that minerals are the backbone of urbanization.

f. Synthetic fibres are made out of coal or petroleum molecules. These fibres are replacing the natural ones on a large scale. Clothes made using synthetic fibres are even exported to other countries which fetch foreign income thus boosting the Indian economy.

g. Above all, the mining industry contributes significantly to the economic development of our country. The total contribution of the mining industry to the Gross Domestic Production of the industrial sector is estimated to be nearly 10 to 12 percent.

h. The export of mineral ores also contributes to the economic development of our country.

It has become clear that minerals are an indispensable part of the Indian economy.

3. Question

Explain the distribution of petroleum mineral in India.

Answer

Petroleum is a fossil fuel. It is obtained from Sedimentary rocks below the surface of the earth.

Formation of Petroleum:

Over a period of time, the dead remains of animals and plants that are buried under the surface of the earth get mixed with other sediments. Due to high temperature and pressure, these remains become fossil fuels such as crude oil and natural gas.

Distribution of Petroleum:

1. The states of Maharashtra, Assam, Gujarat, and Rajasthan accounts for ninety percent of the country's petroleum production.

2. The three main basins where petroleum is distributed are:

a. Cambay basin which lies in Gujarat

b. Upper Assam

c. Bombay High

3. The major oil wells in Upper Assam are found in Naharkatia, Moran, Digboi, Sibsagar, and Rudrasagar regions. It has to be noted that Digboi is the oldest oil field in India.

4. The major oil wells that are in the Cambay basin are Ankaleshwar, Kosamba, Dhalka, Nawagam, Mahasena, and Sobhasan.

5. Bombay High lies at distance of 167 km to the north west of Mumbai.

6. Besides the major basins, there are some other areas where we can find abundant petroleum reserve.

7. They are Ganga valley, Andaman Islands, Krishna-Godavari basin, Cauvery basin, Tripura-Nagaland belt, and Rajasthan.

Crude oil which is obtained from the reserves is refined to form petrol, diesel, kerosene, etc.,

Since petroleum is an exhaustible and non-replenishable mineral, it is our responsibility to use this wisely to achieve sustainable development.

4. Question

Explain the distribution of coal in India.

Answer

India is the third largest producer of coal in India. Basically, coal contains carbon. Based on the carbon content, coal can be classified into four categories as follows:

a. Anthracite which contains 80-90 percent of carbon

b. Bituminous which contains 75-80 percent of carbon

c. Lignite which contains 35-50 percent of carbon

d. Peat which contains 15-35 percent of carbon.

Distribution of coal in India is as follows:

a. Jharkhand:

Jharia, Bokaro, Rajmahal, Devghar, Daltonganj are the areas in the state rich in coal reserves.

b. Odisha:

Coal is abundant in the areas of Sambalpur, Talchar, Sundergarh and Brahmani valley regions.

c. Chhattisgarh:

Bilaspur, Surguja, Ramgarh, Corba, Bishrampur are some of the areas where coal is found.

d. West Bengal:

Raniganj, Bardhaman, Bakunda, Purulia, Birbhum, and Darjiling are the areas where coal reserves are located.

e. Madhya Pradesh:

Coal reserves are located in the areas of Shahdaul, Chindwara, Narsinghpura, and Betul.

f. Andhra Pradesh and Telangana:

Khammam, Adilabad, Bargal, Sigreli, and Cherlapalli are the areas where coal is found.

g. Maharashtra:

Chandrapur, Yaktwal, and Nagpur regions are rich in coal reserves.

h. Uttar Pradesh:

Coal reserves can be found in the regions of Sonbhadra district.

i. Rajasthan:

Lignite coal is found in the areas of Kapuradi, Jalippa, Giral, Bhadkha, Gunga, and Shiva of Barmer district. It is also available in other places like Medta, Kuchera, Kasnau, and Matasukh in Nagaur, Barsingser, Palana, Gudha, Bithnok of Bikaner.

The eastern and other states of India accounts for six percent in the total coal production of the country.

The vast reserves of coal have thus led India to rank number three next to America and China.

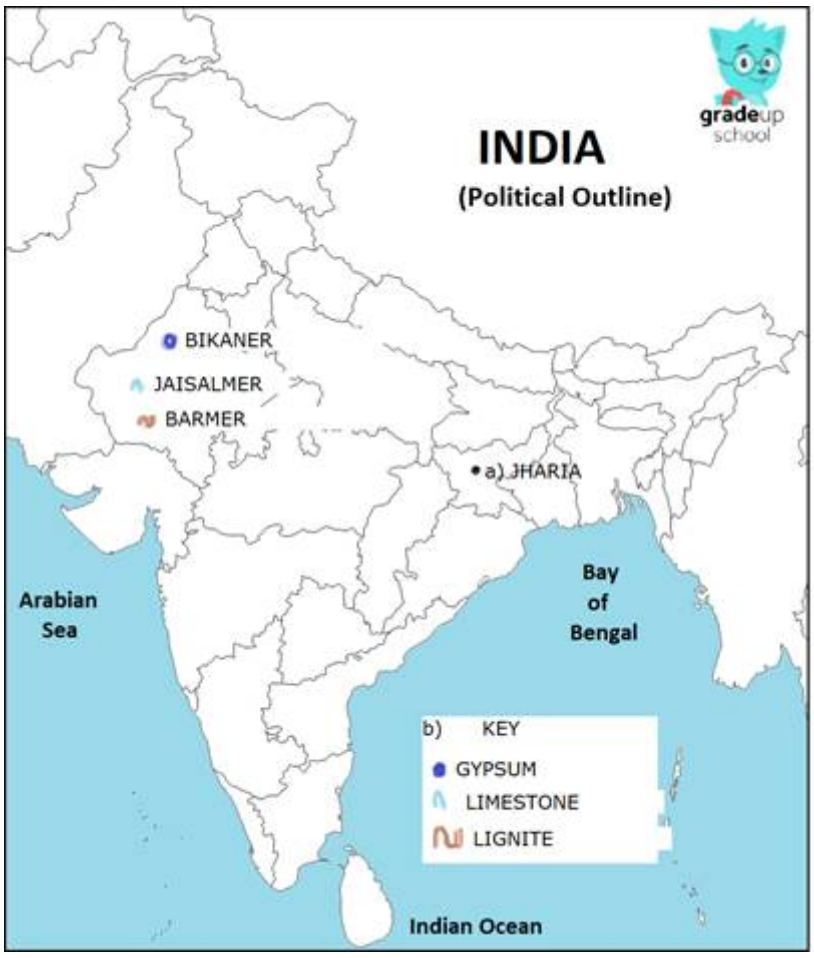
5. Question

Mark the following in map-

(a) Coalfield of India

(b) Important mineral of Rajasthan

Answer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