Class-10th

Geography, Chapter-8

1. What are 'minerals'? What are the two broad classifications of minerals?

Ans.1 A mineral is a naturally occurring crystalline solid that cannot be physically broken down into smaller components. Deposits of minerals form when a medium that contains and transports mineral-making ore releases and deposits the ore. Magma is one such medium that transports ores.

Two broad classification of minerals are:-

i. Metallic minerals ii. Non- metallic minerals

2. What are the four unique characteristics of minerals?

Ans.2 Four unique characteristics of minerals are:-

i. There is uneven distribution of minerals all over the earth.

ii. Quality and quantity of minerals available in the country decide the pace of economic growth internally and its political might externally.

iii. They are exhaustible resources (They take replenished easily). Hence, conservation of minerals is essential.

iv. Minerals are essential for industrial and technological development.

3. What does coal consist of? What types of rocks are associated with coal deposits?

Ans.3 Coal consists of inflammable organic substances composed mainly of **hydrocarbons.** Coal is formed in the sedimentary rocks of organic origin. Cal beds in between sedimentary rock layers are called **'seams'.**

4. On the basis of its carbon content, what are the four broad classifications of coal?

Ans.4 On the basis of carbon content, four broad classifications of coal are:-

i. Anthracite coal:-It has more than 80% of carbon.

ii. Bituminous coal:-It has carbon content from 60-80%.

iii. Lignite coal:-Carbon content varies between 40% to less than 60%.

iv. Peat coal:-It is a lowest carbon content therefore peat is an inferior variety of coal.

5. What are the various uses of coal?

Ans.5 **Uses of coal are:-**

i. Coal is used to produce thermal electricity.

ii. Good quality coal is used to smelt iron ore.

iii. It is used as an important raw material in many Industries such as cement, chemical, chemical fertilizers, synthetic fiber and plastics etc.

iv. Chemicals such as ammonia, benzol etc. are obtained from coal.

v. It is an important source of domestic fuel.

6. What are seams?

Ans.6 Seam is a stratum of coal or mineral that is economically viable; a bed or a distinct layer of vein of rock in other layers of rock.

7. Which coal mine is called the 'storehouse of Indian coal'? Why?

Ans.7 Jharia coal mine is called the 'storehouse of Indian coal', because Jharia mine in Jharkhand covers an area of 453km^2. About 50 per cent of our coal comes from the Jhariya mine.

8. Which two industries are known for large quantity of coal consumption?

Ans.8 Iron & Steel Industry and Thermal energy power plant are the two industries that use a high quantity of coal.

9. Where in India do we have open coal mines? What type of coal is found here? What is the main use of this coal?

Ans.9 Mukum in Assam has open mines of tertiary coal. It is used mainly for railways and in tea factories.

10. Where do we find most of our lignite coal deposits?

Ans.10 Assam, Rajasthan, Tamil Nadu and Jammu Kashmir are the main states from where we find most of our lignite coal deposits.

11. What is NCDC? When was it set up? What was the purpose of establishing it?

Ans.11 In 1956, National Coal Development Corporation (NCDC) was formed with 11 coal mines and assigned with the task of identifying new coalfields through exploration and expediting development of new coal mines.

12. What are the problems of coal mining in India?

Ans.12 Problems in coal mining in India are:-

i. Coal is largely concentrated in Chota-nagpur Plateau. Being a bulky commodity/mineral, the cost of transportation of coal to far-flung areas of demand is high.

ii. Very high labour cost, since coal is largely extracted from underground mines.

iii. Unsafe working conditions in the mines as they often prone to disasters such as floods.

iv. Most of these areas are today Maoist strongholds, which has further contributed to their unsafe working conditions.

13. Distinguish between Gondwana coal and tertiary coal.

Ans.13

Gondwana Coal	**Tertiary Coal**
It is about 200 million years old.	It is about 55 million years old.
It contains the minimum amount of moisture and sulphur.	It contains higher per cent of moisture and sulphur.
About 98% of Indian coal is of this type.	About 2% of Indian coal is of this type.

14. Which mineral is known as 'liquid gold' or 'black liquid gold'? Why?

Ans.14 Petroleum is known as 'liquid gold' or 'black liquid gold' because of its high value in the market. It also serves directly or indirectly as a source for many organic products which are useful to humans. Like gold, it is expensive and difficult to find.

15. What type of rocks are associated with petroleum reserves? What does petroleum consist of?

Ans.15 It is commonly noted that petroleum occurs almost exclusively within sedimentary rocks (sandstones, limestones, and claystones). Petroleum is seldom found in igneous or metamorphic rocks. Thus petroleum geology is very largely concerned with the study of sedimentary rocks.

Crude oil is composed of hydrocarbons, which are mainly hydrogen and carbon. Other elements such as nitrogen, sulfur, oxygen and metals such as iron, nickel, and copper can also be mixed in with the hydrocarbons in small amounts.

16. What is the importance of petroleum?

Ans.16 Currently, petroleum is among our most important natural resources. We use gasoline, jet fuel, and diesel fuel to run cars, trucks, aircraft, ships, and other vehicles. Home heat sources include oil, natural gas, and electricity, which in many areas is generated by burning natural gas.

17. What are the three basic requirements for the collection of petroleum products in the crust?

Ans.17 Requirements for Petroleum Deposits:-

i. Porous rocks to allow the collection of large amount of oil.

ii. Permeability of rock strata for its collection in oil wells when the wells are drilled.

iii. Impermeable rock-bed to hold this collection of oil without further percolation.

18. What are the various forms in which petroleum products are put to use?

Ans.18 Uses of petroleum:-

i. It is used as fuel in various forms such as petrol, diesel, jet fuel, kerosene and liquefied petroleum gas.

ii. Petrochemical products obtained after the extraction of petroleum include synthetic rubber, synthetic fibre, polystyrene, polyvinyl chloride (PVC), printing ink, photographic films, paints, varnishes, lubricating oil and plastic, etc. These are of great economic value.

iii. Petroleum is also used for the generation of electricity which is then put to a wide variety of uses.

19. Which was the first Indian state to produce petroleum? Where was India’s first petroleum well drilled?

Ans.19 Assam was the first state to produce petroleum in India. The colonial era saw the first oilfield being developed by the Assam Oil Company, a private entity, in Digboi in Tinsukia district of Assam, where oil was discovered.

20. Which the most important oil reserve of India in terms of output? Where is it located?

Ans.20 A half of India's domestic petroleum production comes from Mumbai High. Sagar Samrat and Hira are the two important oil platforms at Mumbai High.

21. Which is the most efficient and cost-effective form of petroleum transportation in the long run?

Ans.21 Pipelines are viewed as the most cost efficient way to move oil on land. However, pipelines can be used the same way to deliver already refined fuels such as gasoline, diesel and even jet fuel from the refinery to distribution facilities or a consumer.

22. What is PCRA? What is its main task?

Ans.22 The Petroleum Conservation Research Association is an organization established in India in 1978, under the aegis of the Indian Ministry of Petroleum and Natural Gas of Government of India that is engaged in promoting energy efficiency in various sectors of the economy.

PCRA is performing functions to promote conservation of petroleum products in the major sectors of economy like transport, industry, households and agriculture through direct technical assistance, R&D (Research & Development) educational & training programmes, and mass awareness campaigns.

23. Most of the oil refineries are located on the coast? Why?

Ans.23 Coastal regions are mainly composed of geological structure of tertiary and quaternary period which is mostly made up of sedimentary rock formations that are rich in fossil fuel matter. Due to this reason, oil and other energy resources are available mostly in these parts of the world.

24. What is meant by 'ores'?

Ans.24 Ore is natural rock or sediment that contains one or more valuable minerals, typically metals that can be mined, treated and sold at a profit. Ore is extracted from the earth through mining and treated or refined, often via smelting, to extract the valuable metals or minerals.

25. Which is the most important metallic mineral mined in India?

Ans.25 Bauxite is the most important metallic mineral mined in India.

26. What are the four types of iron ore? Which of these is not mined in India?

Ans.26 The four types or iron are:-

i. Magnetite (black ore):-It is the best quality ore. It has more than 70% of iron. It has the highest magnetic properties.

ii. Haematite (red ore):-It is reddish in colour and contains 60-70% of iron.

iii. Limonite (yellow or light brown):-It contains around 35 to 50% of iron.

iv. Siderite (light black or grey):-It contains less than 35% of iron and has many impurities. Siderite is not found in India.

27. What are the four unique features of magnetite ore? Name a few States where it is largely mined?

Ans.27 Four unique features of magnetite ore are:-

i. It is one of just a few minerals that are attracted to a common magnet.

ii. It is a black, opaque, submetallic to metallic mineral with a Mohs hardness between 5 and 6.5.

iii. It is often found in the form of isometric crystals.

iv. It is the most strongly magnetic mineral found in nature.

Magnetite ore is mostly found in Karnataka, Andhra Pradesh, Rajasthan, Tamil Nadu and Goa.

28. What are the two unique features of hematite ore? Name a few states where it us largely mined?

Ans.28 Two unique features of hematite ore:-

i. Hematite is colored black to steel or silver-gray, brown to reddish-brown, or red. It is mined as the main ore of iron.

ii. Varieties include kidney ore, martite (pseudomorphs after magnetite), iron rose and specularite (specular hematite). While these forms vary, they all have a rust-red streak.

Haematite resources are located in Orissa, Jharkhand, Chhattisgarh, Karnataka, Goa, Maharashtra, Andhra Pradesh and Rajasthan. Magnetic resources are located in Karnataka, Andhra Pradesh, Goa, Kerala, Jharkhand, Rajasthan and Tamil Nadu.

29. List some of the important uses of iron/iron ore.

Ans.29 The main uses of iron are:-

i. Around 90% of it is used for making steel.

ii. Manufacturing of metallurgy product, magnets, etc.

iii. Radioactive iron is used in the medical field and in biomedical research.

iv. It is used as a raw material in paints, printing inks, plastics, paper, dyeing, fertilisers etc.

v. Iron plays an important role in transport industry.

30. What is the manganese? Why is it used in making of steel?

Ans.30 Magnesia is a metallic mineral widely used in iron and steel industry as it gives toughness to steel.

31. Apart from steel making what are the three other main uses of Manganese?

Ans.31 Three uses of manganese are:-

i. It is also used in dry cell batteries.

ii. Manganese is used as a black-brown pigment in paint.

iii. It is an essential trace element for living creatures.

32. Name any two important districts with manganese reserves in the following states:-

a. Madhya Pradesh:-Chhindwara, Mangla and Jabalpur.

b. Karnataka:-Chitradurga, Shimoga and Bellary.

c. Maharashtra:-Nagpur, Bhandara and Ratnagiri.

d. Rajasthan:-Banswara, Udaipur and Pali.

33. Name the ore from which aluminium is obtained. What is the special quality of aluminium?

Ans.33 Bauxite is the aluminium ore. Aluminum is a light, tough and durable metal. It is widely use in the manufacturing of aeroplanes, electrical cables, headlight reflectors etc.

34. Why us the aluminium widely used in the following industries:-(a) Electric (b) Engines (c) Utensils (d) Aeroplane

Ans.34 a. Electric:-Aluminum has cost and weight advantages over copper and is the preferred material for electricity transmission and distribution uses today. Due to aluminum's superior conductivity-to-weight ratio compared with copper, the metal is now used for wiring in residences, buildings, aircraft and appliances.

b. Engines:-Aluminum's strength allows it to replace heavier metals without the loss of strength associated with other metals, while benefitting from its lighter weight. Additionally, load-bearing structures can take advantage of aluminum's strength to make aircraft production more reliable and cost-efficient.

c. Utensils:-Aluminum is more malleable and elastic than steel. Aluminum can be used to form different shapes, and this guides its use in utensils. Because it's corrosion resistant, aluminum can be used in a moist or abrasive environment.

d. Aeroplanes:-Aluminum is ideal for aircraft manufacture because it's lightweight and strong. Aluminum is roughly a third the weight of steel, allowing an aircraft to carry more weight and or become more fuel efficient. Furthermore, aluminum's high resistance to corrosion ensures the safety of the aircraft and its passengers.

35. Which is the largest aluminium manufacturing company in India? Where is its largest plant located?

Ans.35 Hindalco, the largest aluminium manufacturer in India, has the country's largest aluminium plant located at Renukoot in Uttar Pradesh.

36. Why is Damodar Valley called 'the Rhur of India'?

Ans.36 Ruhr valley is an area in west Germany bounded by rivers Ruhr, Rhine and Lippe. It is rich in minerals, specifically coal, which led to the development of many industries in the valley region especially iron and steel industries. So, it is for this resemblance that the Damodar Valley is also called the 'Ruhr' of India.

37. Which mineral is used as reagent in the desulphurisation process?

Ans.37 Desulphurisation of metal can be controlled by adding reagents (via injection or mixing), such as lime, calcium carbide and magnesium. Lime is the most applied reagent, which can be used in every desulphurisation process.

38. List any two important features of the iron ore mined in India.

Ans.38 Important features of the iron ore mined in India are:-

i. India has substantial iron ore resources, with significant deposits of hematite and magnetite.

ii. Iron ores play vital role for economy as hematite is considered to be the most important iron ore because of its high grade quality & lumpy nature, which is consumed by a large number of steel & sponge iron industries in the country.