

Quadrant I: Notes

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Notes:

Mineral is a homogenous naturally occurring substance with a definable internal structure, ranging from the hardest diamond to the softest talc. It is the most valuable natural resources. Minerals are associated with igneous and metamorphic rocks. They may occur alone or in association with other minerals or rocks. Minerals containing metals as their major constituents are called as ore minerals. Iron Ore: India has the largest reserve of iron ore in Asia. The principal ores are Haematite and magnetite. The iron ore mines occur in close proximity to the coal fields in the north-eastern plateau region of the country. The total reserves of iron ore in the country were about 20 billion tonnes in the year 2004-05.

About 95 per cent of total reserves of iron ore is located in the States of Odisha, Jharkhand, Chhattisgarh, Karnataka, Goa, Telangana, Andhra Pradesh and Tamil Nadu. Following states have iron ore reserves: Orissa: Gurumahisani, Sulaipet, Badampahar (Mayurbhaj), Kiruburu (Kendujhar) and Bonai (Sundergarh). Jharkhand: Noamundi and Gua located Singhbhum districts further extending to Durg, Dantewara and Bailadila, Dalli, and Rajhara in Durg. Karnataka: Sandur-Hospet area of Ballari district, Baba Budan hills and Kudremukh in Chikkamagaluru district and parts of Shivamogga, Chitradurg and Tumakuru districts. Maharashtra: Chandrapur, Bhandara and Ratnagiri. Telangana: Karimnagar and Warangal district. Andhra Pradesh: Kurnool, Cuddapah and Anantapur districts. Tamil Nadu: Salem and Nilgiris districts. Goa has also emerged as an important producer of iron ore. Coal: Coal is used in the generation of thermal power and smelting of iron ore. About 80 per cent of the coal deposits in India is of bituminous type and is of non-coking grade. The most important Gondwana coal fields of India are located in Damodar Valley. They lie in Jharkhand-Bengal coal belt (Raniganj, Jharia, Bokaro, Giridih, Karanpura). It is also found in Godavari, Mahanadi and Son. Singrauli in M.P. and part in U.P., Korba in Chhattisgarh, Talcher and Rampur in Odisha,

Chanda–Wardha, Kamptee and Bander in Maharashtra and Singareni in Telangana and Pandur in Andhra Pradesh are some of other areas where coal is found.

Tertiary coals occur in Assam, Arunachal Pradesh, Meghalaya and Nagaland. Brown coal or lignite occur in the coastal TN, Pondicherry, Gujarat and Jammu and Kashmir. Petroleum: The following states have petroleum reserves Assam: Digboi, Naharkatiya and Moran Gujarat: Ankaleshwar, Kalol, Mehsana, Nawagam, Kosamba and Lunej. Mumbai High: 120 km off Mumbai was discovered in 1973 and production commenced in 1976. Oil and natural gas have been found in exploratory wells in Krishna-Godavari and Kaveri basin on the east coast. Oil and natural gas commission, oil India Ltd. And reliance are entrusted with the work of oil exploration According to ONGC about 60% of the oil reserves lie in the offshore Mumbai high and 40% in Assam and Gujarat. Mumbai high has 65% of natural gas production, While Assam and Gujarat have 35% Manganese :Manganese is an important raw material for smelting of iron ore and also used for manufacturing ferro alloys.

The states where Manganese is distributed are: Odisha: is the leading producer of Manganese (Bonai, Kendujhar, Sundergarh, Gangpur, Koraput, Kalahandi and Bolangir) Karnataka: Dharwar, Ballari, Belagavi, North Canara, Chikmagalur, Shivamogga, Chitradurg and Tumkur. Maharashtra: Nagpur, Bhandara and Ratnagiri districts. Madhya Pradesh: Balaghat Chhindwara-Nimar-Mandla and Jabua districts. Telangana, Goa, and Jharkhand are other minor producers of manganese. Bauxite: It is used in manufacturing of aluminium, found mainly in hill ranges of peninsular India and also in the coastal tracts of the country. The states having Bauxite deposits are: Odisha: largest producer of Bauxite. Kalahandi and Sambalpur are the leading producers, Bolangir and Koraput. Jharkhand: Lohardarga Chhattisgarh: Amarkantak plateau, Katni-Jabalpur area and Balaghat in M.P. Maharashtra: Ratnagiri, Satara, Pune and Kolhapur Karnataka, Tamil Nadu and Goa are minor producers of bauxite Limestone : 75 per cent of the total production comes from Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Rajasthan, Gujarat and Karnataka. Madhya Pradesh-Chhattisgarh: produce about 27 per cent of the total limestone production in India (Jabalpur, Bilaspur, Damoh, Rewa and Bastar, Betul, Raigarh, Durg) Andhra Pradesh: 16 per cent of the total limestone production in India.

It is the second largest producer and the main producing districts are Cuddappah, Vishakhapatnam, Kurnool, Guntur, Karimnagar, Nalgonda, Adilabad, Warangal and Mahbubnagar Copper: The total copper metal resources in India are about 12.29 million tonnes. Largest resources of copper ore to a tune of 777.17 million tonnes (49.86%) are found in the state of Rajasthan, followed by Madhya Pradesh with 377.19 million tonnes (24.2%) and Jharkhand with 288.12 million tonnes (18.49%). The Copper resources in Andhra Pradesh, Gujarat, Haryana, Karnataka, Maharashtra, Meghalaya, Odisha, Sikkim, Tamil Nadu, Uttarakhand and West Bengal accounted for about 8% of the total all India resources. Zinc and Lead: The total resources of lead and zinc ores are estimated to be around 685.59 million

tonnes. Rajasthan is endowed with the largest resources of lead-zinc ore amounting to 607.53 million tonnes in India (88.61%). It is followed by Andhra Pradesh 22.69 million tonnes (3.31%), Madhya Pradesh 14.84 million tonnes (2.16%), Bihar 11.43 million tonnes (1.67%) and Maharashtra 9.27 million tonnes (1.35%). Resources are also established in Gujarat, Meghalaya, Odisha, Sikkim, Tamil Nadu, Uttarakhand and West Bengal. Gold: Total resources of gold ore in the country estimated to be around 493.69 mt. Largest resources in terms of gold ore (primary) are located in Bihar (45%) followed by Rajasthan (23%) and Karnataka (22%), West Bengal (3%), and Andhra Pradesh & Madhya Pradesh (2% each). Remaining 3% resources of gold are located in Chhattisgarh, Jharkhand, Kerala, Maharashtra and Tamil Nadu. In terms of metal content, Karnataka remained on the top followed by Rajasthan, Bihar, Andhra Pradesh and Jharkhand.

Silver: In India, there are no native silver deposits except the small and unique Bharak deposit of silver in Rajasthan. Silver occurs, generally, with lead, zinc, copper and gold ores. The total resources of silver ore in the country are estimated to be around 466.98 million tonnes. Rajasthan accounted for about 87% resources in terms of ore, Jharkhand 5%, Andhra Pradesh 4% and Karnataka 2%. Madhya Pradesh, Uttarakhand, Odisha, Meghalaya, Sikkim, Tamil Nadu and Maharashtra together shared 2% ore resources. Cobalt: It is associated mostly with copper, nickel and arsenic ores. The total resources of cobalt in India are about 44.91 million tonnes. Odisha (69%), Jharkhand (31%), Nagaland (5 million tonnes). Molybdenum: Molybdenum is associated with copper, lead and zinc ores. It occurs in Rakha copper deposit (Jharkhand), Malanjkhand (MP), Dariba-Rajpura lead-zinc deposit (Rajasthan), multimetal deposit at in Khasi and Jaintia Hills (Meghalaya) and also in Karadikuttam in Madurai district, Tamil Nadu. Nickel: Nickeliferous limonite is found in the overburden of chromite in Sukinda Valley and Jajpur district (Odisha). Nickel also occurs in sulphide form along with copper mineralisation in the East Singhbhum district, Jharkhand. It is found associated with uranium deposits at Jaduguda, Jharkhand. Other places are Karnataka, Kerala and Rajasthan. Polymetallic nodules are yet another source of nickel. Tin: Primary and secondary forms have been reported from Bihar, Chhattisgarh, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Odisha, Rajasthan and West Bengal. The total resources of tin ore in the Country are about 83.73 million tonnes.