



INDUSTRIAL DEVELOPMENT

The processing of natural resources into more useful items is called manufacturing. These manufactured goods are finished products derived from the raw materials. These raw materials used in manufacturing industry may be either in their natural form such as cotton, wool, iron ore etc. or may be in the semi processed form like cotton yarn, pig iron etc. which can further be used for making more useful goods. Thus the finished product of one industry may serve as the raw material for another industry. Economic development cannot be achieved by a country without developing its industries. There is a direct relationship between the level of industrial development and the economic prosperity of a country. Developed countries like the USA, Japan, Russia owe due to their prosperity to highly developed industries. Industrially less developed countries export their natural resources and import finished goods at higher prices and continue to remain economically backward.

In India manufacturing industries contributed about 30 per cent of the gross domestic product. These industries provide employment to about 28 million people. Thus industries are a major source of national income and employment.

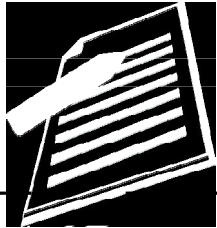
In this lesson, we will study different types of industries, their classification and then distribution in India.



OBJECTIVES

After studying this lesson, you will be able to :

- trace the historical development of industries in India;
- understand the role of industries in the economic development of our country;
- classify the industries on the basis of different criteria;





- establish the relationship of industrial development with agriculture, minerals and energy;
- examine the factors affecting the localization of industries;
- describe spatial distribution of some major agro-based and mineral based industries in India;
- locate and identify selected industries on the map of India;
- explain the role of different policies in augmenting industrial development in India;
- establish the relationship between industrial development and regional development;
- establish the effects of economic liberalization on location and growth of industries; and
- explain impact of industrial development on environment.

24.1 BRIEF HISTORY OF MODERN INDUSTRIES

The modern industrial development in India started with the establishment of the first cotton textile mill at Mumbai in 1854, predominantly with Indian capital and entrepreneurship. Jute industry made a beginning in 1855 with the establishment of a jute mill in the Hooghly Valley near Kolkata with foreign capital and entrepreneurship. Coal mining was first started at Raniganj in 1772. Railways were introduced in 1854. Tata Iron and Steel Plant was set up at Jamshedpur in 1907. Several other medium and small size industries like cement, glass, soaps, chemicals, jute, sugar and paper followed. The industrial production in pre-independence period was neither adequate nor diversified.

At the time of independence, the economy was under-developed with agriculture contributing to more than 60 per cent of the GDP and most of the country's export earnings. After 60 years of independence, India has now shown the signs of becoming a leading economic power.

Industrial development in India can be divided into two phases. The Government successively increased its control over different economic sectors during the first phase (1947-1980). In the second phase (1980-97) it took measures to liberalise the economy between 1980 and 1992. These measures were somewhat adhoc. After 1992, the whole process of liberalization became more focused and radically different in nature.

After independence, systematic industrial planning under different five year plans helped in establishing a large number of heavy and medium industries. The main thrust of the industrial policy was to remove regional imbalances and to introduce diversification of industries. Indigenous capabilities were developed to achieve self sufficiency. It is due to these efforts that India has been able to develop in the field of industry. Today, we export a large number of industrial goods to various countries.

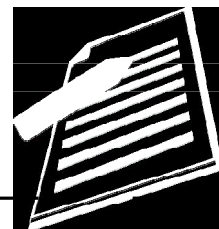


INTEXT QUESTIONS 24.1

1. When and where was coal mining first started?

2. In which year the railways were introduced in India?

3. Where was Tata Iron and steel plant established?



Notes

24.2 CLASSIFICATION OF INDUSTRIES

Industries can be classified on different basis. Classification of industries on the basis of five criteria has been given in the following table.

Table No. 24.1 Classification of Industries

Sl.No.	Criteria	Types of Industries	Main characteristics	Examples
1.	Sources of Raw Material	(i) Agro-based Industries	Agricultural products used as raw materials	Cotton textile, jute, sugar and paper industry
		(ii) Mineral based Industries	Minerals are used as raw materials	Iron and steel, chemical and cement industry
2.	Ownership	(i) Public Sector	Owned and managed by Government	Bokaro iron and steel plant, Chittaranjan locomotive works.
		(ii) Private Sector	Owned and managed by an individual or a group as a company	Tata Iron and Steel J.K. cement industry Appolo Tyres.
		(iii) Joint Sector	Owned jointly by public and private sectors	Maruti Udyog
		(iv) Cooperative Sector	Owned by cooperative society of raw material producers	Sugar industry in Maharashtra, Amul (Gujarat) and IFFCO (Kandla)
3.	Function or Role	(i) Basic Industry	Finished products of basic industry are used as raw material for other industries	Iron and Steel and petro-chemical industries.
		(ii) Consumer Goods Industry	Finished products of this industry are directly used by individuals.	Toothpaste, soap, sugar industry
4.	Size of Industry	(i) Large Scale Industry	Huge investment, heavy machinery, large number of workers, large factory, 24 hour's operation.	Iron and steel, oil refineries,



Notes

	(ii) Small Scale Industries	Small investment, small factory, few factory workers	cycles, electrical goods industry
	(iii) Rural and Cottage Industries	owned by family members, small machine at homes	Jewellery, handicrafts, handlooms, art work
5. Weight of Raw Materials and Finished Products	(i) Heavy Industries	Both raw material and finished products are heavy and bulky, high transport cost	Iron and steel, BHEL (Hardwar): heavy electrical like generator.
	(ii) Light Industries	Both raw material and finished products are light in weight, low transport cost.	Watches, readymade garments, toys, fountain pens.

This is not necessary for any particular industry to be included only in one category. Depending upon the classification, the same industry can become an example of different types of industries. For example, Bokaro Iron and Steel plant is a mineral based industry. It is in public sector. It is a basic industry. It is large scale industry and also an example of heavy industry.



INTEXT QUESTIONS 24.2

- Which one of the following industries belongs to public sector?
 - J.K. Cement
 - Tata Iron and Steel Plant
 - Bokaro Iron and Steel Plant
 - Raymonds Synthetics
- Which one of the following is a consumer industry?
 - Petro-chemicals.
 - Iron and steel
 - Chittranjan Locomotives
 - Sugar Industry
- Which one of the following is a small scale industry?
 - Sugar
 - Paper
 - Cotton
 - Ceiling Fans
- Name five criteria under which industries can be classified.
 - _____
 - _____
 - _____
 - _____
 - _____

24.3 AGRO-BASED INDUSTRIES

Textiles, sugar, paper and vegetable oil industry are some of the examples of agro-based industries. These industries use agricultural products as their raw materials.

Textile industry is the largest industry in the organized sector. It comprises of (i) cotton textiles, (ii) woolen textiles, (iii) silk textiles (iv) synthetic fibres and (v) jute textile industries. Textiles has been a major component of the industrial sector. It accounts for nearly a fifth of the industrial output and a third of the export earnings. In term of employment, it comes next only to agriculture sector.

(A) COTTON TEXTILE INDUSTRY

The industrial development in India began with the establishment of first successful modern cotton textile mill at Mumbai in 1854. Since then the industry has witnessed a phenomenal growth. The numbers of mills increased from 378 in 1952 to 1782 by March 1998.

Cotton textiles has an important place in the economy of the country. It provides employment opportunities to a large number of people. About one fifth of the total industrial labour is absorbed by this industry.

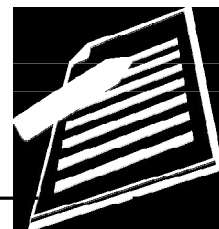
(a) Production

Cotton textile industry comprises of three sectors: mill sector, handloom and powerloom. The share of large mill, handloom and powerloom sector in the total production of cotton cloth in 1998-99 was 5.4 per cent, 20.6 per cent and 74 per cent respectively. The cloth production of cotton textile increased from 421 crore square metres in 1950-51 to 1794.9 crore square metres in 1998-99.

The Cotton and synthetic fibre textile industry has made tremendous progress. Per capita availability of cloth from both the types was 15 metres only in 1960-61. In the year 1995-96, it has risen to 28 metres. This has enabled us to export cotton yarn, cotton fabrics and cotton and synthetic garments on a large scale. In 1995-96 we earned 2.6 billion dollars by their exports.

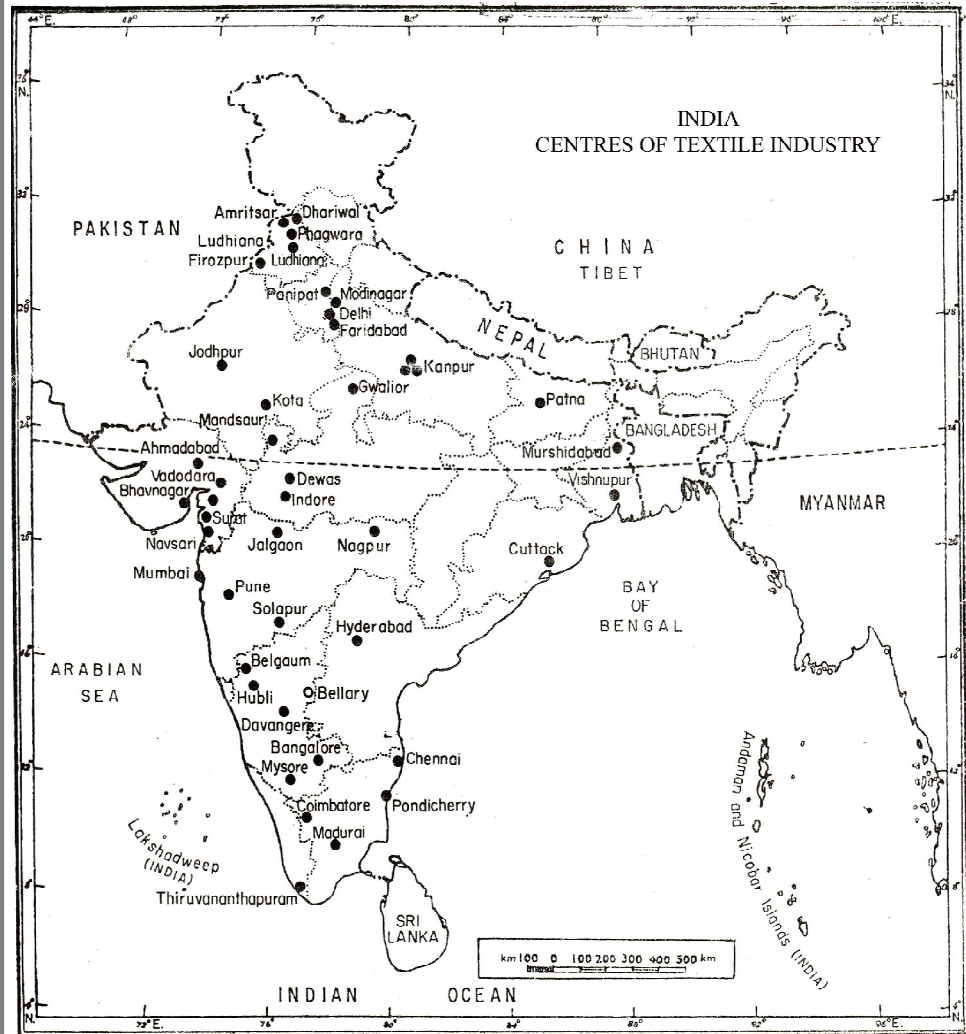
(b) Distribution

Cotton textile industry is one of the most widely distributed industries in our country. These mills are located in more than 88 centres in different parts of the country. But majority of cotton textile mills are still located in the cotton growing areas of the great plains and peninsular India. (Fig 24.1)

**Notes**



Notes



Based upon Survey of India outline map printed in 1979.
 The territorial waters of India extend into the sea to a distance of twelve nautical miles, measured from the appropriate base line.
 The boundary of Meghalaya shown on this map is as interpreted from the North-Eastern Areas (Reorganisation) Act, 1971, but has yet to be verified.
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Fig. 24.1: India : Centres of Textile Industry

Maharashtra is the leading producer of cotton textile in the country. Mumbai is the major centre of textile mills. About a half of the Cotton textile mills are located in Mumbai alone. It is, therefore, rightly called as ‘Cottonpolis’ of India. Sholapur, Kohlapur, Nagpur, Pune, Aurangabad and Jalgaon are other important centres in Maharashtra.

Gujarat, which ranks second in the production of cotton textiles, Ahmedabad is the major centre of the state. Surat, Bharauch, Vadodara, Bhavnagar and Rajkot are other centres in the state.

Tamil Nadu has emerged as an important producer of cotton textiles in southern states. Coimbatore is an important centre in the state. Tirunelveli, Chennai, Madurai, Tiruchirapalli, Salem and Thanjavour are other important centers here.

In Karnataka, cotton textile industry is concentrated at Bangalore, Mysore, Belgaum and Gulberga. Kanpur, Etawah, Modinagar, Varanasi, and Hathras are important centres in Uttar Pradesh. In Madhya Pradesh this industry is concentrated at Indore and Gwalior. Howrah, Serampur and Murshidabad are important Cotton textile centres in West Bengal.

Rajasthan, Punjab, Haryana and Andhra Pradesh are the other states producing cotton textiles.

The following are the factors for the localization of textile industry in Ahmedabad–Mumbai – Pune region.

1. Availability of raw material – A large amount of cotton is grown in this belt.
2. Availability of capital – Mumbai, Ahmedabad and Pune are the places where capital for investment is easily available.
3. Means of transport – This region is well connected with the rest of India by roads and railways. It, therefore, facilitates transportation of finished products.
4. Accessibility to the market – Maharashtra and Gujarat has a large market to sell textile products here. Developed means of transportation help in movement of textile products to other market centres as well as to foreign market. Now a days the market has become a dominant factor in determining the location of cotton textile industry.
5. Nearness to ports – Mumbai port facilitates the import of machinery and good quality of cotton from abroad and export of the finished products.
6. Cheap labour – Cheap and skilled labour is easily available from the surrounding areas.
7. Availability of power – Cheap and sufficient power is easily available here.

B. SUGAR INDUSTRY

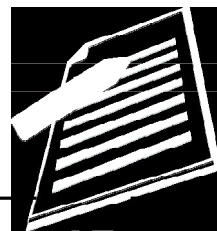
Sugar industry is the second largest agro-based industry of India. If we take Gur, Khandsari and Sugar together, then India becomes the largest producer of sugar product in the world. In 2003, there were about 453 sugar mills in the country. This industry employs about 2.5 lakh people.

(a) Production

The production of sugar depends upon the production of sugarcane and it fluctuates with the fluctuations in the production of sugarcane. The total sugar production in 1950-51 was 11.3 lakh tonnes. It increased to 201.32 lakh tonnes in 2002-2003. In 2003-04, it fell down to 138 lakh tonnes.

(b) Distribution

Most of the sugar mills are concentrated in six states, namely Uttar Pradesh, Bihar, Maharashtra, Tamil Nadu, Karnataka and Andhra Pradesh.





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Uttar Pradesh – It holds a significant position in the production of sugar. The sugar mills are highly concentrated in the western Uttar Pradesh in the districts of Meerut, Muzaffar Nagar, Saharanpur, Bijnor, Moradabad and Bulandshahar. In the eastern Uttar Pradesh Deoria, Basti, Gonda and Gorakhpur are important centres. Uttar Pradesh has largest area under sugarcane cultivation. It has about half of the total area under sugarcane cultivation. But it was able to produce only one third of the total production of sugar (2003-04) in the country. Evidently, per hectare production as well as sugar contain in produce are relatively low.

Maharashtra – Maharashtra is the most important state in the peninsular India producing about one fourth of the total sugar production in India. Major centres of sugar production are Nasik, Pune, Satara, Sangli, Kolhapur and Sholapur.

Andhra Pradesh – East and West Godawari, Visakha-pattnam, Nizamabad, Medak and Chittoor districts are the centres of sugar mills in this state.

Tamil Nadu – In Tamil Nadu North and South Arcot, Madurai, Coimbatore and Tiruchirapalli are the important districts for sugar production.

Karnataka – It is also an important sugar producing state. Belgaum, Mandya, Bijapur, Bellary, Shimonga and Chitradurga are sugar producing districts.

Bihar, Gujarat, Punjab, Haryana, and Rajasthan are other states where sugar mills are located.

The following are the factors for the localization of sugar industry –

- 1) Sugarcane is the main raw material for making sugar. Sugar mills can be set up only in the sugarcane producing areas. Sugarcane gets dry soon after harvesting. It can neither be stored nor kept for long period of time. Sugarcane should be taken immediately to the sugar mills after harvesting.
- 2) Transportation cost of sugarcane is high. Generally sugarcane is transported through bullock carts which can carry it upto 20-25 kilometers. Recently tractor trolleys and trucks have been used to carry sugarcane to the sugar mills.

Beside these factors, capital, market, labour and power also play significant role in localization of this industry.

Reasons for shifting of sugar industry from North India to Peninsular India–

Over the period, sugarcane industry is gradually shifting from north Indian states to states in Peninsular India. Some of the important reasons are as follows:

- 1) The production of sugarcane per hectare is higher in Peninsular India. In fact, sugarcane crop grows well in the tropical climate of south India.

- 2) The sucrose contents is higher in the tropical variety of sugarcane grown in the south.
- 3) The crushing season in south India is longer than in north India.
- 4) In south India most of the mills have modern machinery.
- 5) Most of the mills in Peninsular India are in cooperative sector, where profit maximization is not the sole objective.

- Agro-based industries use agricultural products as their raw material.
- Cotton textile industry is the largest industry of organised sector in India.
- Cotton textile industry is widely distributed in India.
- Large number of sugar mills are located in Maharashtra, Uttar Pradesh, Tamil Nadu, Karnataka, Andhra Pradesh, Gujarat and Bihar.



INTEXT QUESTIONS 24.3

1. When and where was first modern Cotton textile mill established?

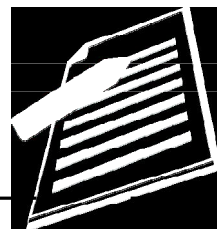
2. How much is the share of powerloom in the total production of cotton textiles in India?

3. Which state is the leading producer of cotton textiles in India?

4. State any three reasons behind the shifting of sugar industry from north India to south India.
 1. _____
 2. _____
 3. _____

24.4 MINERAL BASED INDUSTRIES

Industries which use minerals as the raw material are called mineral based industries. Iron and steel industry is the most important among these industries. Engineering, cement, chemical and fertilizer industries are also important mineral based industries.



A. IRON AND STEEL INDUSTRY

Iron and steel industry is a basic industry and its products serve as a raw material for a number of other industries.

Although iron and steel manufacturing activity in India is very old, modern iron and steel industry started with the establishment of 'Bengal Iron and Steel Works' at Kulti in West Bengal in 1817. Tata Iron and Steel company was established at Jamshedpur in 1907. This was followed by 'Indian Iron and Steel plant' at Burnpur in 1919. All the three plants were established in the private sector. The first public sector iron and steel plant, which is now known as 'Visvesvarayya Iron and Steel works', was established at Bhadrawati in 1923.

The iron and steel industry made rapid progress after independence. The production capacity has increased in all the existing units. Three new integrated steel plants were established at Rourkela, Bhilai and Durgapur. Bokaro steel plant was established under public sector in 1964. Bokaro and Bhilai plants were set up with the collaboration of the former Soviet Union. Durgapur steel plant was set up in Collaboration with United Kingdom while Rourkela plant was established with the help of Germany. Vishakhapatnam and Salem plants were set up afterwards.

At the time of independence, India produced only a small quantity of iron and steel. Production of finished steel in the country was only 10-lakh tonnes in 1950-51 which has increased to 23.8 million tonnes in 1998-99.

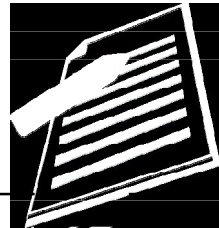
The major iron and steel plants of India are situated in the states of Jharkhand, West Bengal, Orissa, Chhattisgarh, Andhra Pradesh, Karnataka and Tamil Nadu. Besides there are about 200 mini steel plants in India with a capacity of 6.2 million tonnes per annum. Mini steel plants produce steel from scrap or sponge iron. These units constitute an important component of iron and steel industry in the country.

Most of the steel plants are located in and around Chhota Nagpur plateau which is endowed with rich deposits of iron ore, coal, manganese and limestone. The details of raw material, ownership and location is given in the following table:-

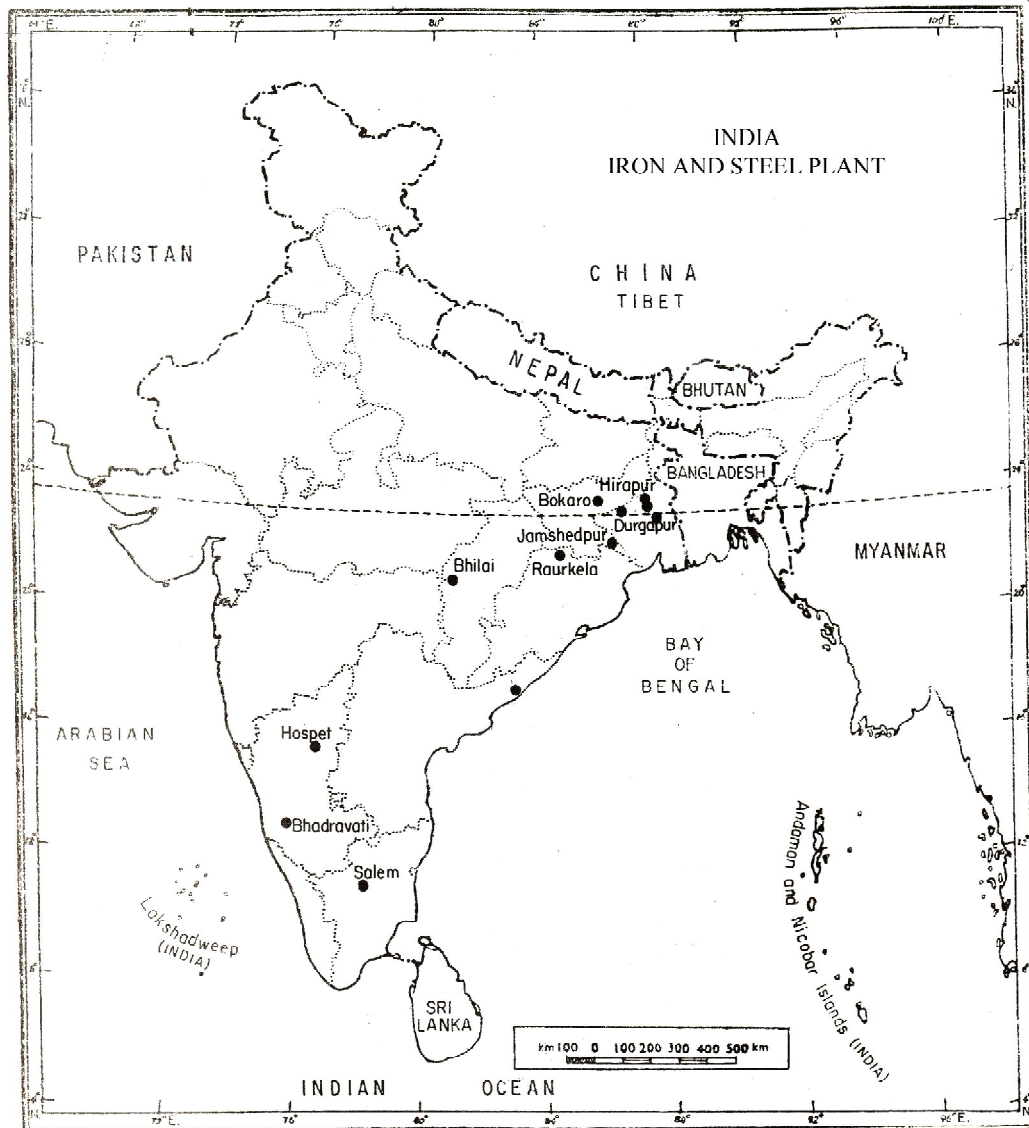
Table No. 24.2 : INDIA : Iron and Steel Plants and their source of raw materials

Sl. No.	Name of the plant	Location	Owner-ship	Coal/power	Raw Material obtained from		
					Iron-Ore	Limestone	Manganese
1.	TISCO	Jamshedpur	Private Sector	Jharia	Mayurbhanj Singhbhumi	Keonjhar	Singhbhumi
2.	IISCO	Burnpur	Public Sector	Jharia/ DVC	Singhbhumi Mayurbhanj	Keonjhar	Singhbhumi
3.	VISL	Bhadrawati	Public Sector	Sharavati Project	Kemaman- gundi	Bhandiguda	Chitradurga Shimoga
4.	HSL	Rourkela	Public Sector	Bokaro/ Jharia/ Hirakud Project	Sundargarh Keonjhar	Pumapani	Bara Janda
5.	HSL	Bhilai	Public Sector	Kargali, Korba	Dalli- Rajhara	Nandini	Balaghat

6.	HSL	Durgapur	Public Sector	Jharia/DVC	Bolangiri (Keonjhar)	Birmitrapur (Sundargarh)	Jamda (Keonjhar)
7.	BSL	Bokaro	Public Sector	Jharia/DVC	Kiriburu in Keonjhar Distt.	Palamau	Barakar
8.	SSP	Salem	Public Sector	Neyveli	Salem Distt.	Salem Distt.	Salem Distt.
9.	VSL	Vishakha Pattnam	Public Sector	Damodar Valley	Bailadila, Chhattisgarh	Chhattisgarh and MP	Balaghat



Notes



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Fig. 24.2: India : Iron and Steel Plants



Notes

The information regarding availability of raw material given in the above mentioned table can also be referred with the figure no. 24.2.



INTEXT QUESTIONS 24.4

1. State the place of location and the year of establishment of ‘Bengal Iron and Steel Works’?

2. In collaboration of which country, the Durgapur steel plant was established?

3. Which one of the following steel plants is located in the state of Andhra Pradesh?
A) Durgapur B) Bokaro C) Bhilai D) Vishakhapatnam
4. Which one of the following steel plants is in private sector?
A) Burnpur B) Bhadrawati C) Jamshedpur D) Bhilai

24.5 PETRO-CHEMICALS INDUSTRY

Petro-chemicals industry is one of the fastest growing industries of India. This industry has revolutionised the industrial scene by providing the products which are substituting the traditional raw materials like wood, glass and metals. Its products meet various needs of the people at the low cost. Petro-chemicals are derived from petroleum or natural gas. We use a variety of products from morning till evening made from petrochemicals Toothbrushes, toothpaste, combs, hairpins, soap cases, plastic mugs, garments, radiocases, ball point pens, detergents, electric switches, lipstick, insecticides, bags, bed covers, and foam are some of the goods made from petro-chemicals.

Indian Petro-Chemical Corporation has set up a huge petro-chemical complex near vadodara producing a wide range of products. Besides Vadodara, Gandhar, and Hazira in Gujarat and Nagathone in Maharashtra are other important centres of petro-chemical industry. India is self sufficient in the production of petro-chemicals.

Crude oil has no value unless it is refined, while refining crude oil, thousands of products like kerosene, diesel, lubricants and raw material for petro-chemical industry are derived. India has at present 18 refineries.

These refineries are at Digboi, Bongaigaon, Nunamati (All are in Assam), Mumbai (two) (Maharashtra), Visakhapatnam (Andhra Pradesh), Barauni (Bihar), Koyali (Gujarat), Mathura (U.P.), Panipat (Haryana), Kochi (Kerala), Mangalore

(Karnataka) and Chennai (Tamil Nadu). The only private oil refineries belongs to Reliance Industries Ltd. is located at Jamnagar (Gujarat).



INTEXT QUESTIONS 24.5

1. Mention three important raw materials substituted by petro chemicals?

1. _____ 2. _____ 3. _____

2. Where has Indian Petrochemical Corporation been headquartered?

3. Write one centre of Petro chemical industry in Maharashtra state.

4. Match the following –

A	B
(a) Nunmati	(i) Kerala
(b) Kochi	(ii) Assam
(c) Karnal	(iii) Bihar
(d) Barauni	(iv) Haryana

24.6 INDUSTRIAL CLUSTERS

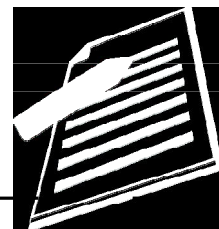
There are regional variations in the levels of industrial development in India. Indian industries have concentrated in clusters at some locations. Most industrial regions in India have developed in the hinterlands of some major ports like Kolkata, Mumbai and Chennai. These industrial regions have all the advantages like availability of raw materials, energy, capital and markets. Six major industrial regions emerged out of which three are in the hinterlands of ports. The six major industrial regions are as follows:-

1. Hooghly Industrial region
2. Mumbai – Pune Industrial region
3. Ahmedabad – Vadodera region
4. Madurai – Coimbatore – Bangalore region
5. Chhota Nagpur plateau region
6. Delhi and Adjoining region

Besides these major industrial regions, there are 15 minor industrial regions and 15 industrial districts.

24.7 INDUSTRIAL SELF RELIANCE

Industrial self reliance means that the people of India establish and operate industries



**Notes**

with their own technical knowledge finances and using machines manufactured in our own country without depending on others.

The Govt of India formulated an industrial policy in 1956 with the objectives of increasing industrial output, generating employment, dispersal of industries, removing regional imbalances in the industrial development and the development of village and small scale industries.

Through planned development of Industries, we now manufacture several types of industrial goods. A major breakthrough has been achieved in the production of capital goods. India is now self reliant in the production of heavy machines and equipment used in mining, irrigation, power projects, transport and communication. We use machines fabricated in India for cement, textile, iron and steel and sugar industries etc..

Public sector has played an important role in achieving industrial self reliance. Iron and steel, railway equipment, petroleum, coal and fertilizer industries, have been developed in this sector. These industries were established in industrially backward regions. During the seventh five year plan an emphasis was laid on high technology, high value addition and knowledge based industries like electronics, advanced machine tools and telecommunications.

24.8 IMPACT OF ECONOMIC LIBERALIZATION

The process of industrialization in India can be divided into two parts – before and after 1992. During first forty years after independence the Indian economy had diversified and expanded very fast. But this growth was characterized by rigid controls and regulations.

In August 1992, Government of India took a bold step by changing its economic policies from state control to market forces. A need was felt to give more responsibility to private capital and enterprise, both domestic as well as foreign. In response to this, the new industrial policy of liberalization, privatisation and globalization was adopted in August 1992. The immediate cause of this changes in economic policy was to tide over balance of payment crises but having wide social, economic, political and geographical implications.

Liberalization means a reduced role for the Government and a greater role for the market or the liberal attitude of the Government for the establishment and running of industries. It was touted as a panacea for the ills of Indian economy. However, after 15 years of following the path of liberalization, the results are not that sweet. The gap between the rich and the poor has increased. Production of goods of mass consumption has not improved. Employment opportunities have not increased at the desired rate. In privatisation there will be transfer of the ownership of public enterprises to private capital, opening of more industrial areas to private capital and enterprise. The main aim of privatisation is to make use of privately owned resources for collective welfare of the people.

Globalization which stands in the current phase for increasing integration between different economies of the world. The economic gap between different nations is reduced by removing all restrictions between nations on the movement of goods, services, capital and technology.

Globalization has made significant impact on consumption patterns and life style of the people. Now a days the whole world has become a market. Globalization has also affected on value system.



INTEXT QUESTIONS 24.6

1. When did India formulated its first industrial policy?

2. Mention any three industries on which emphasis has been laid in the VII five year plan.

3. What is meant by liberalization?

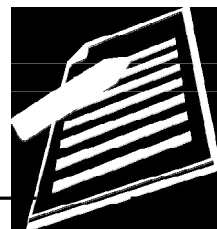


WHAT YOU HAVE LEARNT

The processing of natural resources into more useful items is called manufacturing. Economic development of a country is directly linked with the level of industrial development. In India the share of manufacturing industries in GDP has been increasing, over the period, especially in post-economic reforms period. Before independence, India was industrially less developed. But after independence India initiated industrial development in a planned manner during its Five Year Plans. Today, India exports a large number of industrial goods to different countries of the world.

Industries can be classified into different categories on the basis, such as of sources of raw material, ownership, functions, size of industry and weight of raw material and finished products. Since India is still an agricultural country, it has developed various agro-based industries such as cotton textile, woolen textile, jute textile and sugar industry. Cotton textile industry is the largest organised sector industry in India. India is also endowed with various minerals, enabling the country to establish various mineral based industries such as iron and steel, heavy engineering, automobiles, chemicals and petro chemical industry.

The Government of India framed policies which have made India self reliant in various sectors of industries. Liberalization, globalization and privatization have



**Notes**

helped in bringing foreign capital and modern technology into the country. Private enterprise is being allowed to enter into various core sectors. This, has resulted into the faster growth of industrial sector.

**TERMINAL QUESTIONS**

1. Why is the cotton textile industry mainly concentrated in and around Mumbai? Give four reasons.
2. State three reasons for the shifting of sugar industry from north India to south India.
3. Giving suitable examples, classify industries on the basis of ownership.
4. Define industrial self reliance. Why does India need industrial self reliance.
5. Describe any four factors responsible for the concentration of iron and steel industry in and around Chhotanagpur plateau.
6. Differentiate between agro-based and mineral based industries. Give two examples of each.

**ANSWERS TO INTEXT QUESTIONS****24.1**

1. 1772, Raniganj
2. 1854
3. Jamshedpur

24.2

1. (iii)
2. (iv)
3. (iv)
4. Source of raw material, ownership, function, size of industry, weight of raw material and finished products. (Any five)

24.3

1. 1854, Mumbai
2. 74%
3. Maharashtra
4. High production of sugarcane/hectare
Higher sucrose content
Longer crushing season

Modernized and well equipped machinery

Mills in cooperative sector (any three)

24.4

1. Kulti in West Bengal, 1817
2. United Kingdom
3. D
4. C

24.5

1. Wood, Glass, Metals
2. Vadodara
3. Negathone
4. (a) and (ii), (b) and (i), (c) and (iv), (d) and (iii)

24.6

1. 1956
2. Electronics, advanced machine tools and telecommunications
3. Reduced role of government and greater role of market.

HINT TO TERMINAL QUESTIONS

1. Refer to 24.3A
2. Refer to 24.3B
3. Refer to 24.2 (Table 1)
4. Refer to 24.7
5. Refer to 24.4
6. Refer to 24.2 (Table 1)

