- Industries of strategic and national importance are usually in the public sector.
- On the basis of size, capital investment and labour force industries are classified as
  - Large-scale,
  - Medium,
  - Small-scale
  - Cottage industries.
- On the basis of ownership industries are categorized as
  - Public sector,
  - Private sector,
  - Joint and
  - Cooperative sector,
- On the basis of the use of their products industries are classified as
  - Basic goods industries,
  - Capital goods industries,
  - Intermediate goods industries,
  - Consumer goods industries.
- On the basis of raw materials used the industries are classified as
  - Agriculture-based industries,
  - Forest-based industries,
  - Mineral-based industries,
  - Industrially processed raw material-based industries.
- On the basis of nature of the manufactured products industries are classified as
  - Metallurgical Industries,
  - Mechanical Engineering Industries,
  - Chemical and Allied Industries,
  - Textile Industries,
  - Food Processing Industries,
  - Electricity Generation,
  - Electronics
  - Communication Industries.
- Iron ore, coking coal, limestone, dolomite, manganese and fire clay are the raw material needed in iron and steel industry.
- The Rourkela Steel plant was set up in collaboration with Germany.
- The Bhilai Steel Plant was established with Russian collaboration.
- Durgapur Steel Plant was set up in collaboration with the United Kingdom.
- Bokaro Steel Plant steel plant was set up with Russian collaboration.
- SAIL (Steel Authority of India limited) was created to manage steel plants.
- Maharashtra, Gujarat and Tamil Nadu are the leading cotton producing states.
- India is the largest producer of both sugar and sugar-cane in the world.
- Maharashtra is a leading sugar producer in the country.
- Mumbai is the hub of the petrochemical industries.
- Petrochemical industries are located near oil refineries.
- Indian Petrochemical Corporation Limited (IPCL) manufactures and distribute petrochemicals like polymers, chemicals, fibres and fibre intermediates.
- Petrofils Cooperative Limited (PCL) produces polyester filament yarn and nylon chips.
- Central Institute of Plastic Engineering and Technology (CIPET) imparts training in petro-chemical industry.
- Polyethylene polymer is a widely used thermoplastic.
- Only industries related to atomic energy and railways are in public sector.

Q.1   Explain any three factors which influence location of industries in India.

Ans.   Industries tend to locate in areas where the cost of production and delivery costs are minimum. The factors which influence these costs are:

  i.   **Raw Materials**:
    a. To minimize costs the industries using heavy or weight-losing raw materials are located in the regions where raw materials are located.
    b. *For example*
        i. Sugar mills in India are located in sugarcane growing areas,
        ii. Pulp industry, copper smelting and pig iron industries are located near their raw materials,
        iii. Iron and steel industries are located near iron ore and coal.
  ii.   **Power:**
    a. Some manufacturing industries are located near sources of power because they require huge amount of electricity,
    b. *For example*
        i. Aluminium and synthetic nitrogen manufacturing industries.

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iii. **Market:**
  a. Nearness to markets provides easy outlets for manufactured products.
  b. ***For example***
     i. Heavy machine, tools, chemicals industries are located near the high demand areas.
     ii. Cotton textile industry is generally located in large urban centre;
     iii. Petroleum refineries are also located near the markets.

iv. **Transport:**
  a. All major industries are located on the trunk rail routes due to easy accessibility from these nodal points.
  b. ***For example***:
     i. Industries are concentrated in Mumbai, Chennai, Delhi and Kolkata.

v. **Labour:**
  a. Industries require skilled labour. Quantity and quality of labour decides the location of industries.

vi. **Historical Factors:**
  a. Older industrial areas are now the main industrial nodes of India.
  b. ***For example***
     i. Mumbai, Kolkata and Chennai have large concentration of industries due to colonial past.

vii. **Industrial Policy:**
  a. In order to bring balanced economic growth and regional development the government provides incentives to industries locating in backward areas.
  b. ***For example***
     i. Iron and steel industry in Bhilai and Rourkela were located to develop backward tribal areas of the country.

IRON AND STEEL PLANTS

Q.2 Why most of the iron and steel plants of India are located in the peninsular plateau?

Ans. Iron and steel industry's location is influenced by:

1. **Gross Raw material:** It requires iron ore, coal, limestone and manganese as a raw material. These are weight-losing (Gross) raw material therefore these industries are located near the source of raw material.

2. **Assembly Cost:** Iron and steel plants are located at place where assembly cost of the raw material is lowest. Some steel plants are located near coal fields or near iron ore producing areas.

3. **Transport:** All the plants are located on trunk rail routes which connects them to large urban markets. These conditions are favourably found in the peninsular plateaus.

COTTON TEXTILE INDUSTRIES

Q.3 State any three reasons for the development of cotton industry during ancient and medieval times in India.

Ans. The development of cotton textile industry in India was due to

i. India is a tropical country and cotton is the most comfortable fabric for a hot and humid climate.
ii. Large quantity of cotton was grown in India.
iii. Abundant skilled labour required for this industry was available in this country.
iv. The people of India produced cotton textiles for generations and transferred the skill from one generation to the other and in the process perfected their skills.

Q.4 Why the first modern cotton mill was established in Mumbai? Mention any three advantages of its location.

Ans. The first modern cotton mill in Mumbai had several advantages as a cotton textile manufacturing centre.

i. It was very close to the cotton producing areas of Gujarat and Maharashtra.
ii. Raw cotton was brought to Mumbai port for transporting to England.
iii. Mumbai was the financial centre and the capital needed to start an industry was available there.
iv. As a large town, cheap and abundant labour was available locally and it attracted labour in large numbers.
v. The machinery required for a cotton textile mill could be directly imported from England.

Q.5 Explain the factors which influence the location of cotton textile industries in India.

Ans. The location of cotton textile industries in India is governed by -

i. Cotton textile industries are now located **close to the market**.
ii. With the **development of the railway network** cotton textile industries expanded towards the south India at Coimbatore, Madurai and Bangalore.
iii. Cotton textile mills were set up at Kanpur based on **local investment**.

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iv. Mills were also set up at Kolkata due to its **port facilities**.
v. With the **development of hydro-electricity** cotton textile mills were located in Tamil Nadu.
vi. **Low labour costs** at Ujjain, Agra, caused industries to be located away from cotton producing areas.

Q.6 Why cotton textile industries are now located **close to the market**?
Ans. Cotton textile industries are located close to the market because of -
i. Cotton is a "pure" raw material which does not lose weight in the manufacturing process.
ii. It is the market that decides what kind of cloth is to be produced.
iii. Also the market for the finished products is extremely variable.

SUGAR INDUSTRIES

Q.7 Why sugar industries in India are located within the cane producing regions?
Ans. Sugar industries are located in cane producing regions because -
i. Sugarcane is a bulky crop therefore it is difficult to transport.
ii. Sugarcane is a weight-losing crop.
iii. The sucrose content in sugarcane begins to dry during its transport after its harvest.
iv. Better recovery of sugar is dependent upon its being crushed within 24 hours of its harvesting.
v. The ratio of sugar to sugarcane varies between 9 to 12 per cent depending on its variety.

PETROCHEMICAL INDUSTRIES

Q.8 What are petrochemical industries? Name four sub groups of products of these industries.
Ans. Many items are obtained from the crude petroleum, which provide raw materials for many new industries; these are collectively known as petrochemical industries. This group of industries is divided into four sub-groups of products:
(i) Polymers: Polymers are used as raw materials in the plastic industry.
(ii) Synthetic fibres: They are used in the manufacturing of fabrics - nylon and polyester.
(iii) Elastomers,
(iv) Surfactant intermediate. They are used to manufacture detergents.

KNOWLEDGE BASED INDUSTRIES

Q.9 What is the major impact of Information Technology (IT) in India's economy?
Ans. IT revolution has a deep influence on the country's economy.
i. The Information Technology (IT) revolution has opened up new possibilities of economic and social development.
ii. The IT and IT enabled BPO services continue to provide employment to educated youth.
iii. Indian software industry has emerged as one of the fastest growing sectors in the economy.
iv. Exports of the Indian software and services sector increased 30-32 per cent from the previous year.
v. The software industry has surpassed electronic hardware production.
vi. The IT software and services industry account for almost 2 per cent of India's GDP.
vii. India's software industry provides international quality products.
viii. A majority of the IT multinational companies have software development centres or research development centres in India.
ix. A major impact of this growth has been on employment creation, which is almost doubled every year.

INDUSTRIAL POLICY

Q.10 Explain any three objectives of new Industrial Policy of India announced in 1991.
Ans. The objectives of new Industrial Policy announced in 1991 are:
i. To build and consolidate the industrial growth,
ii. Correct the weaknesses in our industries,
iii. Maintain a sustained growth in productivity and gainful employment
iv. Attain international competitiveness.

Q.11 Mention measures initiated under new Industrial Policy of India announced in 1991.
Ans. Important measures initiated under NEP of 1991 were:
(1) Abolition of industrial licensing,
(2) Free entry to foreign technology,
(3) Foreign investment policy,

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(4) Access to capital market,
(5) Open trade,
(6) Abolition of phased manufacturing programme,
(7) Liberalized industrial location programme.

Q.12   Explain the three main dimensions of new Industrial Policy of India.
Ans.   The policy has three main dimensions: liberalization, privatization and globalization.
 i.   *Liberalization*: The industrial policy has been liberalized by
      a. abolishing licensing system,
      b. allowing free entry of foreign technology and investment,
      c. Attract private investor both domestic and multi-nationals.
 ii.   *Privatization*: private sector has been given important role in industrial development. Important steps were
      a. to bring down government shares in all non-strategic public sector industries,
      b. to de-reserve the industries listed as public sector;
      c. Many sectors have been opened to private investment such as mining, banking, telecommunication, defence, etc.,
      d. To give complete autonomy to the public sector undertakings for working as private sector.
 iii.   *Globalization*: means integrating the economy of the country with the world economy. Under this step following measures were taken:
      a. opening of the economy to foreign direct investment by providing facilities to foreign companies to invest in different fields of economies activity in India;
      b. removing restrictions and obstacles to the entry of multinational companies in India;
      c. allowing Indian companies to enter into foreign collaboration in India and also encouraging them to set up joint ventures abroad;
      d. carrying out massive import liberalization programmes by switching over from quantitative restrictions to tariffs in the first place, and then bringing down the level of import duties considerably; and
      e. Instead of a set of export incentives, opting for exchange rate adjustments for promoting export.

Q.13   Mention any three problems related to Foreign Direct investment in India.
Ans.   The foreign investment in India has not been up-to the our expectations:
 i.   In spite of many concessions foreign direct investment has been limited.
 ii.   There is a wide gap between approved and actual investment.
 iii.   Most of the investment has been limited to consumer goods industries while infrastructural sector was untouched.
 iv.   Major share of both domestic investment as well as foreign direct investment went to already developed states.

MAJOR INDUSTRIAL REGIONS
Q.14   Name the major industrial regions of India.
Ans.   There are 8 major industrial regions of India. They are:
     1. Mumabi-Pune Region,
     2. Hugli Region,
     3. Bangalore-Tamil Nadu Region,
     4. Gujarat Region,
     5. Chotanagpur Region,
     6. Vishakhapatnam-Guntur Region,
     7. Gurgaon-Delhi-Meerut Region,
     8. Kollam-Tiruvantapuram Region.

Q.15   State any three indices used to identify the clustering of industries in India.
Ans.   Several indices are used to identify the clustering of industries, important among them are:
     (i)   The number of industrial units,
     (ii)   Number of industrial workers,
     (iii)   Quantum of power used for industrial purposes,
     (iv)   Total industrial output,
     (v)   Value added by manufacturing,

Q.16   Mention important industries and factors which helped in the development of Mumbai -- Pune industrial region.
Ans.   Factors which helped in its development:
     (i)   The development of this region started with the location of cotton textile industry in Mumbai.

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    (ii)   With the development of cotton textile industry, chemical industry also developed.

    (iii)   By the opening of the Suez Canal, Mumbai port developed and import of machinery became easy.

    (iv)   Mineral oil for Mumbai high developed petrochemical industries. Nuclear energy plants provided power to the industries.

    (v)   Hydro-electricity was developed in the Western Ghat region to meet the requirements of this industry.

Major industries in this region are: engineering goods, petroleum refining, petrochemical, leather, synthetic and plastic goods, and chemical drugs, fertilizer, and electronics industries.

Important industrial centres are Mumbai, Colaba, Nasik, Solapur, and Ahmednagar.

Q.17   Mention important industries and factors which helped the development of Hugli industrial region.

Ans.   Factors which helped the development of Hugli industrial region are:

    (i)   Kolkata-Haora forms the nucleus of this region.

    (ii)   It developed with the opening of river port on Hugli River in seventeenth century

    (iii)   Kolkata is connected with interior parts by railway lines and the road routes.

    (iv)   Development of tea plantations in Assam and West Bengal, opening of coal fields in Damodar valley opening of jute processing units in this region boosted its development.

    (v)   Supply of cheap labour from nearby thickly populated areas contributed to its development.

    (vi)   Location of petroleum refinery at Haldia has facilitated the development of petrochemical industry in this region.

Important industries are: jute industries, cotton textile industries, paper, pharmaceuticals, and petrochemical industries.

Q.18   Write important industries and factors which helped the development of Chotanagpur industrial region.

Ans.   This region is known for Iron and Steel industry. Five steel plants are: Jamshedpur, Durgapur, Bokaro, and Rourkela. Other industries are: Heavy engineering, machine tools, cement, locomotives. The factors which led to its development are: proximity to the coal and iron fields, power from Damodar valley plants, densely populated regions, nearness to Hugli market.

Q.19   Write important industries and factors which helped the development of Delhi-Merrut-Gurgaon industrial region.   Why light and market oriented industries are located in Delhi-Merrut-Gurgaon industrial region?

Ans.   The industries in this region are light and market oriented because this region is located far from the mineral and power resources. Electronics, light engineering, electrical goods, software industry, vanaspati industry are some of the important industries of this region.

Q.20   Write important industries and factors which helped the development of Gujarat industrial region.

Ans.   Ahmedabad and Vadodra is the nucleus of this region. Important industries are: cotton textile, petrochemical, heavy chemicals, motor, dairy products. Decline of cotton textile industry in Mumbai industrial region led to the development of this region. It is located in the cotton growing region. Proximity to the markets in Ganga plain, oil fields and location of port at Kandla led to the development of this region.

Q.21   Write important industries and factors which helped the development of Bangalore-Tamil Nadu industrial region.

Ans.   The important industries are: cotton textile industry, heavy engineering, aircraft, watch, machine tools, and electronics. Presence of cotton, electricity from Pykara hydroelectric plant, mineral from nearby region led to the development of this region.

Q.22   Write important industries and factors which helped the development of Kollam-Thriuvananthapuram industrial region.

Ans.   Agricultural products processing and market oriented industries are important industries in this region because it is located far away from the mineral belt of the country. Cotton textile, matchbox, chemical, fish-based industries are important industries of this region. Plantation agriculture and hydropower led to the development of this region. Location of petroleum refinery at Kochi has added an advantage to new industries.