

अभ्यास | CLASS 10<sup>TH</sup>

# SOCIAL SCIENCE

**GEOGRAPHY | MANUFACTURING INDUSTRIES**

*Crafted with love* 

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## Manufacturing Industries

*Main theory part*



Importance of manufacturing

Industrial pollution and environmental degradation

Control of environmental degradation



*Classification of industry [on different basis]*



- **Agro based industries** [Cotton textile, Jute textiles, Sugar industry]
- **Mineral - based industries** [Iron and steel industry, Aluminum smelting, chemical industries, Fertilizer industry, Cement industry, Automobile industry, Information communication]

## Manufacturing &amp; it's importance



1. Modernise agriculture and reduces dependence of people.
2. Eradicates unemployment and reduces regional disparities.
3. Export brings foreign exchange.
4. Encourages prosperity of country through higher value of finished goods.



Production of goods in large quantities after processing from raw materials to more valuable products is called manufacturing.

- **Agriculture and industry goes hand in hand because.**
- Agriculture gives raw materials to industries. While industry gives tools, fertilizers etc and buy products from farmers.

In the present day world of globalisation, our industry needs to be more efficient and competitive.



Self-sufficiency + goods must be at par in quality with those in the international market

## Classification of Industries



*On the basis of*

- **Raw material based:** Agro based, mineral based.
- **According to their main role:** Basic or key industries, consumer industries
- **Capital investment based:** Small scale, large scale.
- **Ownership:** Public sector, private sector, joint sector, cooperative sector
- **Bulk and weight of raw material and finished goods:** Heavy industries, light industries

There are two statements given as Assertion (A) and Reason (R). Read both the statements and choose the correct option. 1

Assertion (A): Agriculture and industry move hand in hand.

Reason (R): Industrial development is a precondition for eradication of unemployment and poverty from the country.

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- a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).
- b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
- c. Assertion (A) is true, but Reason (R) is false.
- d. Assertion (A) is false, but Reason (R) is true.

## Agro based Industries

→ Textile Industries (cotton textile &amp; jute)



Occupies unique position →

- It contributes significantly to industrial production, employment generation and foreign exchange earnings.
- Self-reliant and complete in the value chain.

## Cotton textiles

1. Localisation in Maharashtra and Gujarat? 🤔
2. Challenges faced. 🤔

- World class production in spinning, but weaving supplies low quality of fabric as it cannot use much of the high quality yarn produced in the country.
- Spinning concentrated in Maharashtra, Gujarat and Tamil Nadu while weaving is decentralized to incorporate traditional skills.

## Jute textiles

1. Localisation in West Bengal 🤔
2. Challenges faced. 🤔 → Partition → Mills = India, Production Area = Bangladesh

- The first jute mill was set up near Kolkata in 1855 at Rishra.

## Sugar Industry

1. Localisation/Shifting in southern states 🤔
2. Challenges faced. 🤔

- Seasonal in nature, produces variety of products. (Sugar, Gur, Khandsari)

**Mineral based Industries**

➡ Iron and steel is major industry, rest you can have an overview

**Iron and steel**

1. Localisation near chota Nagpur plateau? 🤔

2. Challenges faced.

➡ Basic Industries, Steel is needed to manufacture a variety of goods, regarded as the index of a country's development, Iron ore, coking coal and limestone are required in the ratio of approximately 4 : 2 : 1.

**Aluminum Smelting**

It is light, resistant to corrosion, a good conductor of heat, malleable.  
Used to manufacture aircraft, utensils & wires.

4 to 6 tonnes of bauxite ➡ 2 tonnes of alumina ➡ 1 tonne of aluminium

**Chemical Industry**

India produces organic & inorganic chemicals. The chemical industry is its own largest consumer.

**Fertilizer Industry**

Centered around production of nitrogenous phosphate and ammonium phosphate fertilizers. India lack potash reserves. After green revolution, the industry expanded.

**Cement Industry**

Essential for construction activity and requires bulky and heavy raw materials. Industry has strategically located plants in Gujarat that have suitable access to the market in the Gulf countries.

**Automobile Industry**

After liberalisation, demand of new contemporary models has increased. FDI brought new technology.

**Information Technology and Electronics**

Bangalore has emerged as electronic capital. Major impact of this industry is on the employment generation.

**Industrial pollution and Environmental Degradation****Air Pollution**

Caused by the presence of high proportion of undesirable gases, such as  $\text{SO}_2$ ,  $\text{CO}_2$ . Airborne particulate materials.

**Water Pollution**

Caused by organic and inorganic industrial wastes and effluents discharged into rivers by paper, pulp, chemical, textile and dyeing, petroleum refineries, etc.

**Thermal Pollution**

Occurs when hot water from factories and thermal plants are drained into rivers and ponds before cooling. Wastes from nuclear power plants.

**Noise Pollution**

Caused due to industrial and construction activities. Machinery saws, electric drills make a lot of noise.

**Control of Environmental Degradation****Water**

Minimising the use of water for processing by reusing and recycling, harvesting of rainwater, treating hot water and effluents before releasing, etc.

**Air**

Reducing particulate matter through fitting **smoke stacks, electrostatic precipitators, fabric filters, scrubbers and inertial separators**. Use oil/gas instead of coal.

**Noise**

Fitting silencers in machinery using noise absorbing material.

**NTPC shows the way**

Equipment adopting latest techniques, Minimising waste generation, Providing green belts, ash pond management, ash water recycling system and liquid waste management, Ecological monitoring

**Agro-based industries:** These industries use agricultural products like cotton, wool, and sugar to make goods like textiles, rubber, and edible oil.

**Mineral-based industries:** These industries use minerals like iron, coal, and limestone to produce products such as cement, aluminum, and steel.

**Basic or Key industries:** These industries supply raw materials (e.g., iron, steel, aluminum) for other industries to produce goods.

**Consumer industries:** These industries produce goods that are used directly by consumers, such as sugar, toothpaste, and sewing machines.

**Small-scale industry:** This industry is defined by a maximum investment of one crore rupees on assets, and typically involves fewer resources and smaller production scales.

**Public sector:** These industries are owned and operated by government agencies, such as BHEL and SAIL.

**Private sector:** These industries are owned and operated by individuals or private companies, such as TISCO and Bajaj Auto.

**Joint Sector Venture :** Which are jointly run by the state and individuals or a group of individuals, e.g. Oil India Ltd.

**Cooperative sector industries:** These industries are owned and managed by a group of people or workers who pool their resources together, like the sugar industry in Maharashtra.



**Ore :** An ore is a natural material that contains a valuable mineral mixed with other substances. The mineral is present in a high enough amount that it is worth extracting for commercial use. How easy or difficult it is to mine depends on the structure of the ore and how it was formed.

**Aluminum smelting:** Aluminum smelting is the process of extracting aluminum metal from its ore, bauxite, through electrolysis. It involves heating the bauxite in a solution to separate aluminum from impurities.

**Particulate Matter :** Solid or liquid matter that remains dispersed in gas or liquid emission and creates pollution.

**Electrostatic Precipitator :** An air pollution control device which works on electricity for removing the solid particles from emitted smoke.

**Fabric Filter :** An air pollution control device that removes particulates out of air by using woven or felted fabric as a filter medium.

**Scrubber :** Pollution control device which uses liquid spray to wash out particulate matter and neutralises gaseous pollutants.

**Inertial Separator:** A device that uses centrifugal force to separate waste particles.

**What is the meaning of manufacturing industry? Why is it considered the backbone of economic development?**



**Production of good in the factories in large quantities after processing from raw materials to move valuable products is called manufacturing industry.**

- **It helps in modernizing agriculture and reduces heavy dependence of people on agriculture.**
- **Industries eradicate the problem of unemployment and poverty reducing regional disparities.**
- **Brings the much needed foreign exchange.**
- **Diversifying industries helps in adding prosperity.**

**Agriculture and industries are complementary to each other? Explain**



1. **Agro industries in India have given a major boost to agriculture by raising its productivity.**
2. **Industries depend on agriculture for their raw material.**
3. **Industries sell that products such as irrigation pumps, fertilisers, etc. to the farmers.**
4. **Industries have made the production processes of agriculture very efficient.**
5. **Agriculture provides a huge market and consumer base for the industrial products.**

**Classify industries on the basis of source of raw material. How are they different from each other.**



- **Industries can be classified into agro-based industries and mineral based industries.**
- **Agro-based industries derive their raw material from an agriculture crop. E.g. Cotton, tea, coffee, etc.**
- **Mineral-based industries derive their raw material from a mineral or a metal. E.g. Iron and steel, machine tools.**

**Explain any three factors responsible for the location of the cotton textile industry in Maharashtra and Gujarat.**



- I. Availability of raw cotton, market, transport including accessible port facilities.**
- II. Cheap labour from the adjoining states.**
- III. The moist climate has caused the concentration of cotton textile industries in Maharashtra and Gujarat regions.**

Analyse any three major challenges faced by the sugar industry in India.



- Old and inefficient methods of production.
- Delay in canes reaching factories for crushing due to inadequate network of roads which leads to decrease the sucrose content in the sugarcane.
- We are still unable to maximise the use of bagasse.

What are the mineral based industries? Give four examples.



- Industries that use minerals and metals as raw materials are called mineral based industries.
- I. **Iron and Steel industry** - All other industries depend on it for their machinery.
  - II. **Chemical industry** - It contributes approximately 3 per cent of India's GDP.
  - III. **Fertiliser industry** - It is centered around the production of nitrogenous, phosphatic, ammonium phosphate and complex fertiliser.
  - IV. **Cement industry** - This requires limestone, silica, alumina and gypsum as raw materials.

What are the challenges faced by iron and steel industry in India.



- i) High Transportation Costs:** The iron and steel industry requires transporting heavy raw materials (iron ore, coal, and limestone) as well as bulky finished goods, leading to significant transportation expenses.
- ii) Dependence on Raw Material Proximity:** The industry needs to be close to high-grade raw materials and resources like iron ore, which limits the location choices for steel plants.
- iii) Efficient Network is a challenge:** Distribution of finished products requires a strong transport network for efficient access to markets, making logistics challenging if the infrastructure is inadequate.



What are the various types of pollution caused by industries? Suggest some measures to prevent environmental degradation caused by them?



The types of pollution caused by industries are :

- **Air Pollution:** Industries emit harmful gases like sulfur dioxide and carbon monoxide, along with particulate matter from burning fossil fuels and industrial processes, which can have severe health impacts.
- **Water Pollution:** Organic and inorganic wastes from industries like textiles, chemicals, and paper are discharged into water bodies, contaminating them with toxic substances such as heavy metals and chemicals.
- **Thermal Pollution:** Hot water discharged from thermal plants into rivers can harm aquatic life and disrupt ecosystems.
- **Noise Pollution:** Industrial activities generate loud noises from machinery, which can cause stress, irritation, and health issues like hearing impairment and increased blood pressure.

The measures to prevent environmental degradation caused by them are :

- **Water Management and Treatment:** Industries should minimize water usage by recycling it, implement rainwater harvesting, and treat effluents through multi-phase processes before discharging them into water bodies.
- **Pollution Control Technologies:** Electrostatic precipitators, fabric filters, scrubbers and inertial separators can be used to reduce Particulate matter in the air.

**Explain the pro-active approach adopted by the National Thermal Power Corporation (NTPC) for preserving the natural environment and resources.**



- **Optimum utilization of equipment adopting latest techniques and upgrading existing equipment.**
- **Minimising waste generation by maximising ash utilization.**
- **Providing green belts for nurturing ecological balances and encouraging afforestation.**
- **Reducing environmental pollution through ash pond management, ash water recycling system and liquid waste management.**
- **Ecological monitoring reviews and online database management for all its power stations.**

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Describe the importance of manufacturing industries as a backbone of economic development of the country. 3

CBSE Board Paper 2019 - Set [32/3/1]

Describe the role of industries in the development of agriculture. 3

CBSE Board Paper 2019 - Set [32/2/1]

How can the industrial pollution of fresh water be reduced? Explain various ways. 3

CBSE Board Paper 2019 - Set [32/5/1]

Why does the textile industry occupy an important position in the Indian economy? Explain. 5

CBSE Board Paper 2019 - Set [32/4/1]

Explain the reasons for concentration of iron and steel industries in and around Chotanagpur region. 5

CBSE Board Paper 2019 - Set [32/1/1]

How are industries responsible for environmental degradation in India? Explain with examples. 5

CBSE Board Paper 32/2/1 (2020)

Describe any three major problems faced by the Jute industry in India.

3

CBSE Board Paper 2020 - Set [32/2/1]

Suggest any three measures to improve environmental degradation.

3

CBSE Board Paper 2020 - Set [32/3/1]

Explain the ways through which the industrial pollution of fresh water can be reduced.

5

CBSE Board Paper 2022 - Set [32/4/1]

Classify industries on the basis of source of raw materials.

2

CBSE Board Paper 2022 - Set [32/2/1]

Classify industries on the basis of raw materials.

2

CBSE Board Paper 2022 - Set [32/2/1]

How is chemical industry in India diversified? Explain.

2

Read the case given below carefully and answer the questions that follow :

4

National Thermal Power Corporation (NTPC) shows the way

NTPC is a major power providing corporation in India. It has ISO certification for EMS (Environment Management System) 14001. The corporation has a proactive approach for preserving the natural environment and resources like water, oil, gas and fuels in places where it is setting up power plants.

This has been possible through:

- (a) Optimum utilisation of equipment adopting latest techniques and upgrading existing equipment.
- (b) Minimising waste generation by maximising ash utilisation.
- (c) Providing green belts for nurturing ecological balance and addressing the question of special purpose vehicles for afforestation.
- (d) Reducing environmental pollution through ash pond management, ash water recycling system and liquid waste management.
- (e) Ecological monitoring, reviews and online database management for all its power stations.

1) Define the term 'sustainable development'.

1

2) What is the idea behind ISO certification?

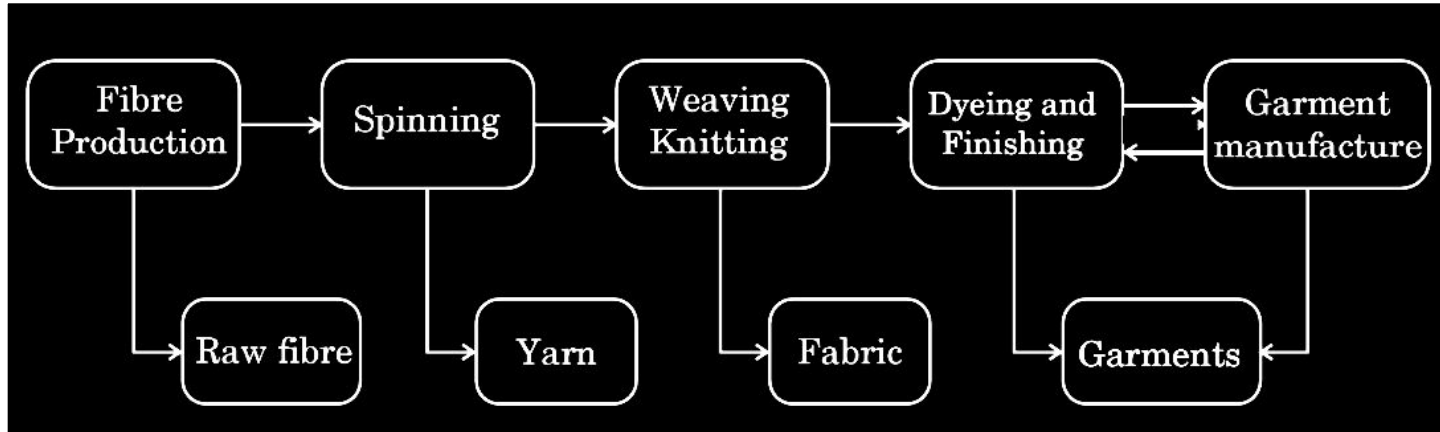
1

3) Examine the proactive approach of National Thermal Power Corporation (NTPC).

2

CBSE Board Paper 2022 - Set [32/1/1]

Study the given flowchart and answer the questions that follow :



1. Which is the basic material required for garment manufacturing?
2. Give one example of value addition in the textile industry.

CBSE Board Paper 2023 - Set [32/4/1]

"Agriculture and industry move hand in hand." Support the statement with examples.

2

CBSE Board Paper 2023 - Set [32/1/1]

How has Information Technology affected Electronic Industry? Explain.

3



CBSE Board Paper 2023 - Set [32/6/1]

"The economic strength of a country is measured by the development of manufacturing industries." Explain with examples.

5

CBSE Board Paper 2023 - Set [32/5/1]

Explain the importance of manufacturing industries.

5

CBSE Board Paper 2023 - Set [32/6/1]

How can the industrial pollution of fresh water be reduced? Explain with examples.

5

CBSE Board Paper 2023 - Set [32/5/1]

Explain any five ways to reduce industrial pollution.

5

CBSE Board Paper 2024 - Set [32/2/2]

Manufacturing sector is considered the backbone of an economic development.' Justify the statement.

3

CBSE Board Paper 2024 - Set [32/1/1]

Suggest any three ways to protect fresh water from industrial pollution.

3

CBSE Board Paper 2024 - Set [32/5/2]

"Manufacturing sector is considered the backbone of development of the country." Justify the statement.

5

CBSE Board Paper 2024 - Set [32/4/1]

Describe the role of manufacturing industries in the economic development of a country.

5

CBSE Board Paper 2024 - Set [32/5/2]

"Agriculture and Industry move hand in hand." Justify the statement.

5

CBSE Board Paper 2024 - Set [32/4/1]

Describe any five steps taken to save fresh water from industrial pollution.

5

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