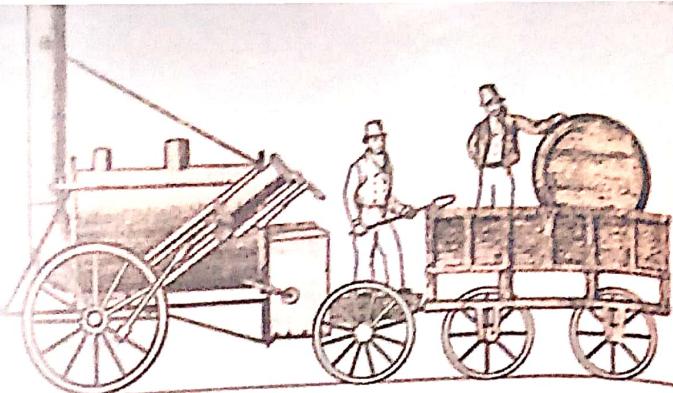


CHAPTER 13

The Modern Age in Europe (C) Industrial Revolution



SYLLABUS

The Modern Age in Europe

(c) Industrial Revolution — definition.
Comparative study of Socialism and Capitalism.

The term 'Industrial Revolution' denotes all those changes that took place in the field of industry during the second half of the 18th century and the first half of the 19th century. Until this period, goods were manufactured at home with hand. However during the period of the Industrial Revolution, the employer made his workers to use machines in his factory. The employees were paid wages for their labour. The period marked a change from handwork to machine work and from domestic system to factory system of production.

In short, the Industrial Revolution is the name given to a series of changes that brought about a transition from production by hand to production by machine, from small-scale production to large-scale production, from handmade goods to machine-made goods.

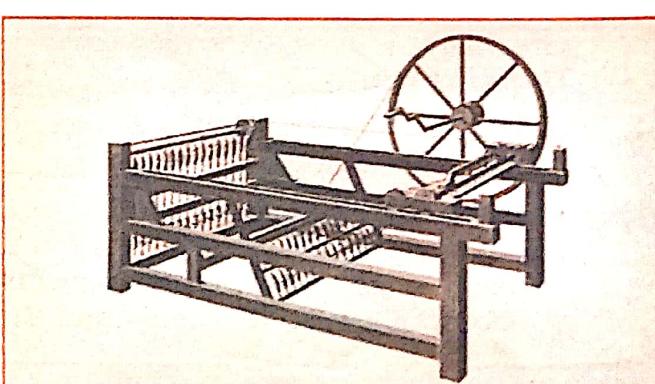
Industrial Revolution was unlike any other revolution. It was not sudden, not violent; there was no bloodshed, nor loss to life and property. The Revolution was peaceful. It began in England around mid-eighteenth century by mass production of goods; and within a hundred years it brought in revolutionary changes in the political, social and economic life of the people.

CAUSES OF THE INDUSTRIAL REVOLUTION

The Industrial Revolution began in England and spread to many other countries. Some of the important causes for the origin of the Industrial Revolution in England are given below:

1. **Congenial Atmosphere:** After the Renaissance and the Reformation, Englishmen began to enjoy the freedom of thought and expression. There was scope for experimentation; and the government did not interfere in their daily life. It was in this atmosphere that the Englishmen thought of new methods of production in different fields. The large number of inventions made by the British scientists, brought about a revolution in industry in England.

Invention of machinery and its use in manufacturing was the starting point of Industrial Revolution. John Key, a weaver of Lancashire, invented '*The Flying Shuttle*' which increased the speed of weaving. It also made the weaving of broad cloth by one person possible. A Lancashire weaver named James Hargreaves invented a machine called the *Spinning Jenny*. It could spin eight threads at a time instead of



Spinning Jenny

one thread of the old-fashioned spinning wheel. Yarn spun on the Jenny was not very strong. Then, Richard Arkwright invented the 'Water Frame'. It produced harder and stronger yarn than that of the Spinning Jenny, but it was run by water power. It ushered in the factory system.

2. Colonial Empire: England had a large colonial empire. From her colonies she could get raw material at cheaper rates for her factories. These colonies also served as markets for the British manufactured goods.

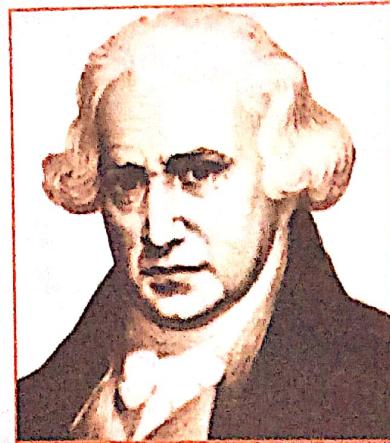
3. Availability of Natural Resources: Natural resources such as iron and coal were available in England. The iron and coal mines were situated close to each other. Iron was used in making machines. The coal provided cheap fuel. Both these factors helped in the development of industries.

4. Increase in the Demand for Goods: The incentive to produce more and more goods was provided by two factors. First, the huge profits of expanding trade provided an impetus to discover new ways of increasing her production. Second, the Napoleonic wars made the English industries quite active. The Napoleonic wars damaged trade and industry of the continental countries. Since these wars were never fought in Britain, the long period of peace in Britain proved conducive to industrial production.

5. Availability of Labour: The feudal system broke down and the Agrarian Revolution preceded the Industrial Revolution in England. As a result, a large number of peasants were unemployed who shifted to cities. So many labourers were available in England to be employed in the factories.

6. Effective Transport System: A good transport system is necessary for effective trade and commerce. In the second half of the 18th century, transport system in England was adequate. The use of tarcoal and tar enabled the construction of roads in many European countries. Steamboats and steamships were used extensively. George Stephenson designed his first locomotive engine, which was used for hauling coal in the Killingworth colliery. This brought about a revolution in transport.

7. Use of Steam: James Watt invented the steam engine. The discovery of steam as a source of power, facilitated the Industrial Revolution.



James Watt

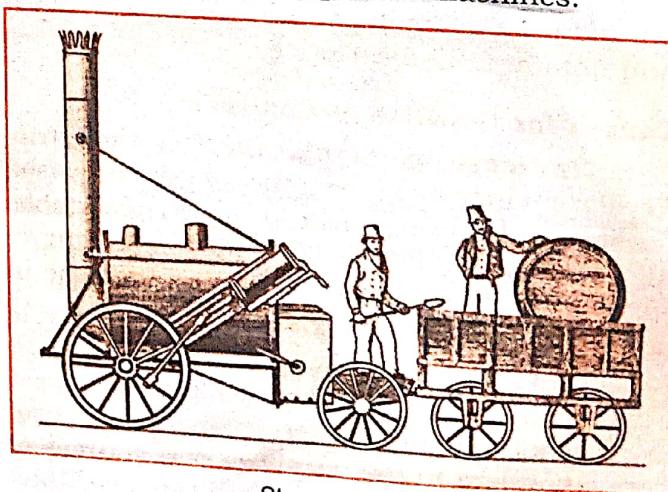
the turn of the nineteenth century steam-power was used for transport both on land and sea. Thus, the transport system was revolutionised.

COMPARATIVE STUDY OF CAPITALISM AND SOCIALISM

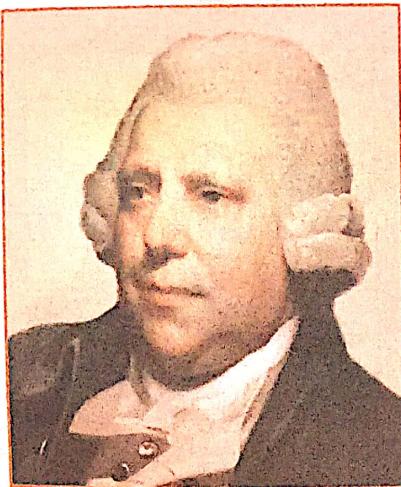
1. CAPITALISM

It is difficult to separate capitalism from Industrial Revolution. Industrial Revolution could not have taken place without the means of carrying on the production by machines. It was eventually realised that wealth could be used for generating more wealth which came to be called capital.

The owners of the capital became the capitalists. The economic system which generates and gives power to capitalists came to be known as capitalism. The capitalists not only provide money for buying machines, tools, implements and raw material but also promote further research to develop improved machines.



Steam Engine



Richard Arkwright

In England, the first machines to be used were those of weaving and spinning. A travelling barber, Richard Arkwright understood the economic potential of using machines 'to clothe' millions of people. From the word 'to clothe' its Latin 'investire' gave rise to a new term called *investment* which means acquisition of financial or productive assets with the help of the capital.

Capital came to be defined as the money which is invested for producing different articles in a factory, for buying machinery and raw material and for selling finished goods in the market.

In capitalism, the means of production such as labour, raw material, tools and machines are owned and controlled by private individuals or groups of them. A significant development was that it also included rent of land and wages of the labour as well as the interest on the wealth invested. With profit as the sole motive, the scientists and inventors too benefitted. They started the system of patenting their inventions and obtained the best price.

Causes for the Rise of Capitalism

1. Increase in Population: The Industrial Revolution increased the national wealth, raised the standard of living, made life more comfortable. All this helped in checking the onslaught of various diseases. Thus, it led to an increase in population.

One of the most obvious changes in people's lives was that more people moved into the urban areas where factories were located. The rural population had risen sharply as new sources of food became available, and death rates declined

due to fewer plagues and wars. At the same time, many small farms disappeared. Thus, people from the rural areas migrated to the urban areas for employment, education, cultural benefits, better freedom and enjoyment.

2. Legal Requirement: There was the new enclosure law which required farmers to put fences or hedges around their fields to prevent common grazing on the land. Small farmers who could not afford to enclose their fields had to sell out their farms to larger landholders and search for work elsewhere. These factors combined to provide a ready workforce for the new industries.

3. Growth of Towns: New manufacturing towns and cities grew dramatically. Many of these cities were located close to the coalfields that supplied fuel to the factories. Factories had to be close to sources of power because power could not be distributed very far. The names of British factory cities soon symbolised industrialisation to the wider world: Liverpool, Birmingham, Leeds, Glasgow, Sheffield and especially Manchester.

4. Mass Production: Mass production destroyed the domestic system of production. The growth of industries and the use of huge machines gave rise to factories. The people of villages shifted to towns for employment in the factories. This in turn led to the growth of new towns in England such as Manchester, Birmingham, Sheffield and Leeds. It made modern civilisation essentially urban in character.

5. Disappearance of Small Farmers: The small farmers who cultivated land and manufactured goods in their spare time, in their homes shifted to new industrial towns. They were forced to seek employment in factories because they were replaced by big landlords. In pre-industrial England, more than three-quarters of the population lived in small villages. By the mid-19th century, however, the country had made history by becoming the first nation with half its population in cities. By 1850 millions of British people lived in crowded, grim industrial cities. Reformers began to speak of the mills and factories as dark, evil places.

IMPACT OF CAPITALISM

1. Loss of Traditional Jobs: The movement of people away from agriculture and into industrial

cities brought great stress on the labour force. Women in households, who had earned income from spinning, found the new factories taking away their source of income. Traditional handloom weavers could no longer compete with the mechanised production of cloth. Skilled labourers lost their jobs as new machines replaced them.

2. Exploitation: In the factories, people had to work long hours under harsh conditions. Factory owners and managers paid the minimum amount necessary for a workforce, often recruiting women and children to tend the machines because they could be hired for very low wages. Soon critics attacked this exploitation, particularly the use of child labour.

3. Stress and Strain: The nature of work changed as a result of division of labour. This idea in the Industrial Revolution called for dividing the production process into basic, individual tasks. Each worker would then perform one task, rather than a single worker doing the entire job. Such division of labour greatly improved productivity, but many of the simplified factory jobs were repetitive and boring. Workers also had to labour for many hours, often more than 12 hours a day, sometimes more than 14 hours, and people worked six days a week. Factory workers faced strict rules and close supervision by the managers. Safety was not a matter of concern, and workers often suffered serious even fatal accidents. The clock ruled life in the mills caused lot of stress among the workers.

4. Overcrowding: People moved from small villages and towns to work in factories located in cities. Cities became overcrowded and unsanitary. The working poor lived in crowded areas in the centre of cities in shoddy houses. Many lived in overcrowded tenements where family members were often forced to share the same bed.

Inevitably, pollution followed population growth. The air was made foul by fumes from fossil fuels such as coal and wood and led to a number of occupational diseases. Sewage and industrial discharge polluted rivers and streams and tainted the water supplies.

However, by about the 1820s, income levels for most workers began to improve, and people adjusted to the different circumstances and conditions. By that time, Britain had changed forever. The economy was expanding at a rate

that was more than twice the pace at which it had grown before the Industrial Revolution. Although vast differences existed between the rich and the poor, most of the population enjoyed some of the fruits of economic growth. The widespread poverty and constant threat of mass starvation that had haunted the pre-industrial age reduced in industrial Britain.

2. SOCIALISM

Birth of Socialism was one of the important consequences of the Industrial Revolution. In the course of the Industrial Revolution efforts were made to improve the working conditions of the labourers.

In 1776, the famous Scottish economist Adam Smith expanded his theory in his *Inquiry into the Nature and Causes of the Wealth of Nations*. In this, he found no conflict between the self-interest of capitalists to create wealth and the contribution to be made by them for common good. They should be allowed to operate without the interference of the State.

In his book he propounded the doctrine of '*Laissez faire*' that translates to 'leave alone'. Adam Smith very strongly abhorred State interference in the economy. He gained both supporters and critics. The antithesis of the *Laissez faire* doctrine was *socialism* which visualised a society free from exploitation.

Meaning of Socialism

Different writers have defined the term 'Socialism' differently but almost all have visualised active role of the State in the economy. Babeuf, one of the early Socialist thinkers, even went to the extent of visualising a *republic of equals* whose welcoming doors will be open to all mankind.

Socialism is defined as *an economic system in which the means of production are owned not by private individuals but by the community in order that all may share more fairly in the wealth produced*.

The evil effects of Capitalism and the spirit of improving the condition of workers gave birth to socialism. The ultimate goal of Socialism is to eliminate class struggle between the capitalists and the workers and form a classless society. In order to achieve these objectives, government control over production and distribution of

important things is considered necessary. Socialists maintain that all factors of production should belong to entire human race or society.

Socialism is based on three principles:

- (i) It is opposed to private capitalism.
- (ii) It is the voice of all workers and the working class.
- (iii) It demands a just distribution of wealth.

The *Laissez faire* doctrine never came to be practised in its true sense. Even England, one of its staunch supporters, could not do without the State taking up many of the initiatives specially the public works and public health programmes, which the capitalists under *laissez faire* could hardly do. On the other hand, many forms of Socialism exist today even after the break up of the erstwhile Union of Socialist Soviet Republics (USSR). Only the degree of State control varies from State to State.

Early Socialists

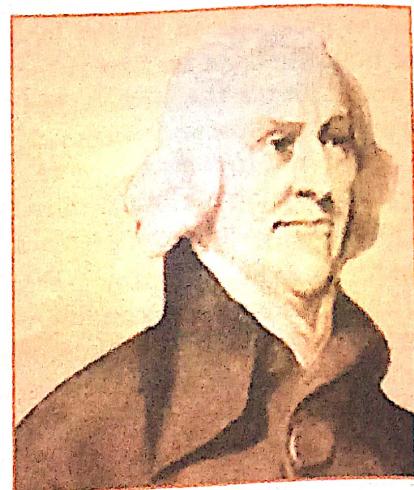
By the middle of the 18th century there arose many political thinkers who favoured some of the above ideas. They all wanted the existing social and economic systems replaced by a new system in which the means of production would be owned by the society as a whole and not by a few capitalists.

The first socialists were Frenchmen—Babeuf, Saint-Simon, Fourier and others. Robert Owen (1771–1858) has been called “the Father of British Socialism”. He owned a cotton mill in Scotland. He reduced the labourers’ working hours, paid them good wages and helped the Trade Union Movement to grow.

CAUSES FOR THE RISE OF SOCIALISM

(i) As a Reaction to the Evils of Capitalism:

As a result of the Industrial Revolution the society was divided into two distinct classes—the capitalists and the socialists. The capitalists had their selfish interests and they began to exploit the workers. They paid them low wages and made them work for long hours. They amassed great wealth and began to lead a luxurious life at the cost of the workers. The rich were becoming richer and the poor, still poorer. This gulf went on widening and created social disharmony and ultimately led to struggle between the two classes. The socialists took the cause of the workers and



Adam Smith

tried to save them from the exploitation of the capitalists.

(ii) Trade Union Movement: The strong Trade Union Movement had forced the British government to recognise the rights of workers. It had brought the division of society into the rich and the poor into sharp focus. This had led to rethinking among the vast majority of workers.

(iii) The Chartist Movement: Between 1836 and 1848, the condition of the labour in Britain was very bad. They had to face many hardships and wanted social and political equality. Their leaders put up their demands before the Parliament in the form of a charter. Hence, the movement was named the *Chartist Movement*. It aimed at getting the right to vote for workers. It led to many riots and strikes and the movement declined in the mid 19th century.

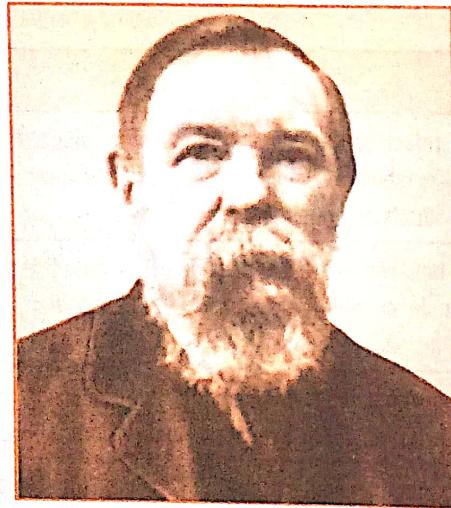
The above causes produced sharp class divisions among capitalists and workers which gave rise to Socialism. The socialists, therefore, wanted to set up a society free of exploitation and class divisions. They proposed that this be achieved through social control of means of production and distribution.

MARXIST SOCIALISM

Karl Marx (1818–83) was a German political philosopher and economist. His long time associate Frederick Engels (1820–1895) whom he had met in France in 1844 was his collaborator in writing the *Communist Manifesto*. Because of his revolutionary ideas Marx had been compelled to leave Germany and make London his homeland. Both Marx and Engels lived in London. They

had earlier prepared a charter of Demands or a Manifesto for the German Communist League. This document was later given the shape of *Communist Manifesto* published in 1848. Another famous book of Marx and Engels is *Das Kapital*. Marx could complete only the first volume before his death in 1883. The remaining two volumes were published by Engels several years later.

Karl Marx considered capitalist society as a society divided between two classes — the working class which produces all value; and the owning and employing class, which without producing anything, exploits the value or profits. This leads to a class struggle between the working class and the employing class. Eventually, this class struggle leads to a crisis, causing the collapse of the capitalist system. The working class would take over power, organise production for its own benefit as a class. This new society would be 'socialist' in nature, a society without exploitation. The system behind this society is known as '*Marxist Socialism*' or 'Socialism' as conceived by Karl Marx himself. In a socialist society, private property in the means of production would be headed by co-operative ownership. A socialist economy would not base production on the creation of private profits, but would instead base production and economic activity on the criteria of satisfying human needs, i.e., production would be carried out directly for use. Eventually, Socialism would give way to a Communism, i.e., a classless, stateless system

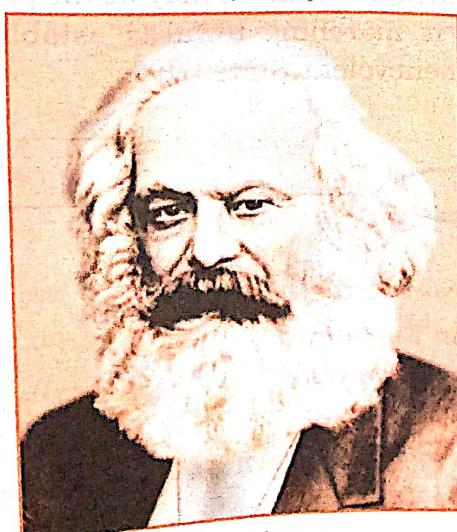


Frederick Engels

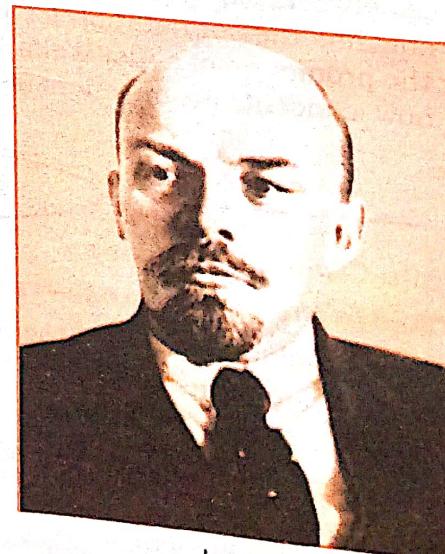
based on common ownership and free access and maximum freedom to individuals to develop their own capacities and talents.

After the death of Karl Marx a new democratic Socialism came to the scene. Bernstein did not agree with the principle of class struggle advocated by Marx. He said that socialist objectives should be achieved through democratic means.

The revolutionary movement in Russia overthrew the Czarist regime in 1917. Lenin and Trotsky were the chief organisers of this Communist Revolution. On October 1, 1949, a Communist regime was established in China under the leadership of Mao Tse-tung. In India too socialist parties emerged. In 1934 Socialist party was established in India under the leadership of Acharya Narendra Dev, Achyut Patwardhan,



Karl Marx



Lenin

Comparative Study Between Capitalism and Socialism

Capitalism	Socialism
Capitalism refers to the economic system in which the means of production like labour, raw material, tools and machines are owned by private individuals or groups of them for profit.	Socialism refers to the economic system in which the government owns and controls the means of production (as factories) and distribution of goods.
Capitalism believes in free market and is opposed to government intervention in economics because it believes that government intervention introduces inefficiencies.	It believes that all individuals should have access to basic articles of consumption and public goods to allow for self-actualisation.
Key proponents of Capitalism include Richard Cantillon, Adam Smith, David Ricardo, Friedrich A. Hayek, Ayn Rand, Milton Friedman.	Key proponents of Socialism include Robert Owen, Pierre Leroux, Karl Marx, Friedrich Engels, John Stuart Mill, Albert Einstein, George Bernard Shaw.
In Capitalism, production is for profit: useful goods and services are a by-product of pursuing profit.	In Socialism, production is for use: useful goods and services are produced specifically for their usefulness.
Competition for ownership of capital drives economic activity and creates a price system that determines resource allocation; profits are reinvested in the economy.	Economic activity and production especially are adjusted by the State to meet human needs and economic demands.
Private property in capital and other goods is the dominant form of property.	Two kinds of property: Personal property, such as houses, clothing, etc. owned by the individual. Public property includes factories, and means of production owned by the State but with worker control.
Production decisions are driven by consumer demand. Individuals choose what to consume and this choice leads to more competition and better products and services.	Production decisions are driven more by the State than by consumer demand. These decisions are made on the basis of human consumption needs and economic demands.
It relies on markets to determine investment, production, and distribution decisions.	It relies on planning to determine investment and production decisions. Planning may be centralised or decentralised.
Examples of countries where Capitalism is the predominant economic system are the USA, the UK, Canada, Australia.	Examples of countries where Socialism is prevalent are China, Denmark, Finland, Sweden, Norway.

Jayaprakash Narayan and Dr. Ram Manohar Lohia. In the present scenario there seems to be a balance between Capitalism and Socialism. Socialism now has the connotation for working further for the promotion of a just Welfare State. Socialists now concentrate on such issues as

protection against unemployment, illness and injury. They also pay special attention to provide old-age pension. Whatever may be the principles, mankind is marching towards establishing a just and benevolent State.

EXERCISES

I. Multiple-Choice Questions

- A. Choose the correct answers to the questions from the given options.
1. Which Revolution preceded the Industrial Revolution in England?
 - (a) Green Revolution
 - (b) Agrarian Revolution
 - (c) Demographic Revolution
 - (d) Happiness Revolution
 2. Who invented 'The Flying Shuttle' which increased the speed of weaving?
 - (a) John Key
 - (b) James Hargreaves
 - (c) Richard Arkwright
 - (d) Jenny

3. Which amongst the following did not lead to the Rise of Capitalism?
 - (a) Legal Requirement
 - (b) Trade Union Movement
 - (c) Mass Production
 - (d) Disappearance of Small Farmers

4. Which of the following is not a cause for the rise of Socialism?
 - (a) Trade Union Movement
 - (b) Chartist Movement
 - (c) Reaction to Capitalism
 - (d) Rise of nation states

5. Who considered Capitalist society as a society divided between two classes—the working class and the employing class?
 - (a) Karl Marx
 - (b) Babeuf
 - (c) Saint-Simon
 - (d) Frederick Engels

B. Read the two statements given below and select the option that shows the correct relationship between (A) and (B).

1. (A) The Industrial Revolution first began in England and then spread to many other countries of the world.
 (B) England had a large colonial empire to provide raw material at cheaper rates for her factories and to serve as a market for her manufactured goods.
 - (a) (B) contradicts (A)
 - (b) (B) is the reason for (A)
 - (c) (A) is true but (B) is false
 - (d) (A) and (B) are independent of each other.

2. (A) Capitalism is the economic system that generates and gives power to the capitalists.
 (B) In capitalism, the means of production such as labour, raw material, tools and machines are owned and controlled by public.
 - (a) (B) contradicts (A)
 - (b) (B) is the reason for (A)
 - (c) (A) is true but (B) is false
 - (d) (A) and (B) are independent of each other.

3. (A) Due to the Industrial Revolution, skilled labourers lost their jobs as new machines replaced them.
 (B) Women and children were recruited in factories as they could be hired for very low wages.
 - (a) (B) contradicts (A)
 - (b) (B) is the reason for (A)
 - (c) (A) is true but (B) is false
 - (d) (A) and (B) are independent of each other.

4. (A) Socialism is an economic system in which the means of production are owned by the community and in which all share fairly the wealth produced.
 (B) The evil effects of Capitalism and the spirit of improving the conditions of workers gave rise to socialism.
 - (a) (B) contradicts (A)
 - (b) (B) is the reason for (A)
 - (c) (A) is true but (B) is false
 - (d) (A) and (B) are independent of each other.

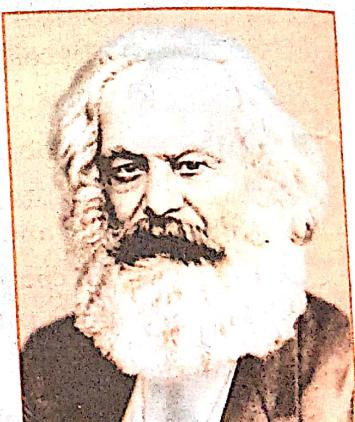
I. Short Answer Questions

1. What is meant by the term, 'Industrial Revolution'?
2. Name any two consequences of the Industrial Revolution in the economic field.
3. What is Capitalism?
4. Who was Karl Marx? Name his outstanding work.
5. What is meant by Socialism?
6. How did the evil effects of Industrial Revolution help in the rise of Socialism?

7. Mention any two effects of the Industrial Revolution on the general public.
8. Mention any two advantages of Industrialisation.
9. Mention two negative effects of the Industrial Revolution on labourers.
10. Mention any two differences between 'Capitalism and Socialism'.

III. Structured Questions

1. The Industrial Revolution marked a change from handwork to machine work and from domestic system of production to factory system of production. In this context, discuss the role of the following factors in ushering in the Industrial Revolution:
 - (a) Invention of machines.
 - (b) Availability of coal and iron.
 - (c) Improved Transportation.
2. With reference to the Industrial Revolution in England, state the role of the following factors:
 - (a) Availability of raw material.
 - (b) Transport System
 - (c) Growth of population.
3. With reference to the rise of Capitalism, answer the following questions:
 - (a) What were the causes for the rise of Capitalism?
 - (b) What was the impact of Capitalism on the working class?
 - (c) How did it give rise to Socialism?
4. With reference to Capitalism and Socialism, state the following:
 - (a) Difference between Capitalism and Socialism in terms of control over means of production and profit.
 - (b) Two key proponents each of Capitalism and Socialism. Give examples of two countries where each economic system is prevalent.
 - (c) What according to you is better of the two economic systems? Give reasons to support your answer.
5. With reference to the picture given, answer the following questions:
 - (a) Identify the person in the picture. Name his longtime associate and co-author. Name one famous publication of this person and his associate.
 - (b) What were the causes for the rise of the economic system propounded by these two individuals?
 - (c) Briefly describe the type of society they envisioned.



IV. Thinking Skills

1. Do you think that the Industrial Revolution was an offshoot of the Renaissance? Give reasons to support your answer.
2. Imagine that you are transported in a Time machine in the era when Industrial Revolution began in England. Write down the problems faced by the workers who were used to making products by hand.
3. If you are given a choice between Capitalism and Socialism, which one you will choose and why? Give reasons to support your answer.

