FRANCE

1. ***Introduction:***

Industrial Revolution is the term used to describe the unprecedented spurt of growth in the industrial sector occurring first in England in the 18th century, and then in continental Europe at various points of time in the 19th century. Some of the most characteristic features of this phenomenon were: an increased use of new technology and production methods, the employment of a sizeable labour-force, and the rapid and a massive output of durable and comparatively low-priced capital and consumer goods. What happened in Europe was the outcome of a particular objective situation. Briefly, population began to increase after the Middle Ages as never before; this obviously resulted in an immediate and increasing demand for food. Consequent shortage compelled human beings to think of ways to increase food production and the productivity of land. With time, more and more agricultural products began to appear in the market, the sale of which led to increased savings and increased purchasing capacity of people. This, in turn, created an unprecedented demand for, and price-rise of, industrial products. The existing feudal industrial production system failed to meet this massive demand, and a prolonged period of experimentation led to the birth of a new, capitalist system of industrial production. This system was geared to meet a great demand for industrial products in a huge market that was continental-wide and even international in nature. This required an enterprising business class, a sizeable outlay of capital, and the deployment of a huge labour-force. It is this phenomenon that has been termed the Industrial Revolution; it is a short-hand term used to describe a new economy that was massive, market-oriented, and capitalistic in nature.

 This is but a very brief and a simplified, although certainly a convenient, description of what historians and social scientists had thought had occurred in the European industrial/economic arena in the 18th and the 19th centuries. They also appeared to believe in the universality and inevitability of the phenomenon: it happened first in England, then in Europe and the USA and Japan, and it would happen elsewhere in the world. This was the opinion of Karl Marx (for instance, *The German* *Ideology*, 1845), as also his intellectual contender, Walt Whitman Rostow (for instance, *The Stages of Economic Growth: A Non-Communist Manifesto*, 1960). However, Alexander Gerschenkron disputed this long-standing idea, and came up with an alternative explanation of especially continental European industrialisation in modern times in “Economic Backwardness in Historical Perspective” (1962). In this path-breaking and influential article, he proffered the hypothesis of “Substitution Process” to show why and how the nature of the Industrial Revolution on the Continent was quite different from that in England.

 Alexander Gerschenkron appeared to imply that the Industrial Revolution occurred in 18th century England first because a situation developed there early, containing all the essential pre-requisites like enterprise, capital, and labour; the emergence of a bourgeoisie favouring a capitalist economy and its subsequent coming to political power further aided the Industrial Revolution there. On the other hand, according to him, because “backwardness” continued to exist in 19th century continental Europe, a feudal state of affairs of the Middle Ages, a situation conducive to the Industrial Revolution could not appear there. Hence, although the continental powers emulated readily England’s novel industrial and economic ventures, their many efforts failed due to unresponsive objective conditions. Which is why, according to Alexander Gerschenkron, because Industrial Revolution did not occur by itself there, it had to be induced by undertaking several steps, developing certain institutions, and by invoking an alternative atmosphere in these countries. Briefly, because a massive market demand and the supply factors essential for modern industrialisation could not be found in what was a largely feudal situation, here the state had to take all the initiative; the desire of the ruling houses to successfully compete with England in the international scene became the compelling reason behind all major initiatives on the Continent. Also, because the process began late in the Continent, because modern technology had meanwhile progressed considerably, and because there was a shortage of labourers, the European powers required much more capital than England; to procure this capital, the state had to devise a novel banking system which came to be known in France as the *Credit Mobilier*. Finally, to enthuse people and have them participate in the industrialising process, alternative strategies in the guise of nationalist and Marxist ideologies had to be popularised. According to Alexander Gerschenkron, all this had an impact upon the very character of the Industrial Revolution there and was quite unlike what happened in England: it developed much more rapidly, it was capital and technology intensive, and it rode on not one or two consumer goods industries but a large array of heavy and capital goods industries.

 These few introductory words are meant to help understand the ensuing discussion on France below. However, it ought to be also kept in mind that, like all others, the “Substitution Process” hypothesis too entailed some simplification – it cannot be expected to accommodate and explain all the facts of French industrialisation. For instance, although the Revolution of 1789 and Napoleonic rule did away with the age-old feudal obstacles to modern industrialisation, certain old social-psychological problems persistently remained and some new problems too cropped up in the war-torn situation. Second, because the average peasant was freed from taxation and other feudal bonds, he did not at all bother to initiate agrarian changes that were so necessary for modern industrialisation. Third, a peculiar weakness for the feudal way of life was one reason why the bourgeoisie began to buy feudal titles and lands after the Revolution of 1789, thereby restricting important investment in the industrial sector. Fourth, the lack of crucial ingredients, like coal and iron, posed a serious problem for French industrialisation throughout the 19th century. Finally, due to these reasons and some others that will be discussed below, the pace of modern industrialisation in France was slower and therefore less spectacular than that in, say, England or Germany.

1. ***Conditions in the Ancien Regime:***

***Agriculture and Poverty in 18th Century France:***

In 18th century France, agricultural land was mostly in the possession of landlords. They kept a portion of that for their own needs, and for the cultivation of which they used hired labourers. The rest used to be occupied by peasants, although they enjoyed no legal rights in them. However, it is also true that by continually occupying such land for a long time these peasants, especially in the Alpine and the Pyrenees regions, had become *de facto* owners to a great extent. Elsewhere, peasants had to pay many kinds of rents to landlords, the chief being the cash-rent known as *Cens*. Land varied in quality: some remote but sufficiently fertile to support agriculture, or the marshy coastal regions of Gascony and Guyenne, or the infertile lands in much of central Massif, or the extremely fertile and commercially exploited areas of Garonne. The medieval open-field system still prevailed, though mostly in the northern part of the country: small parcels of land, demarcated by innumerable narrow strips, occupied by poor villagers who practised a sort of communal cultivation. However, in the southern part, both peasants and landlords, with an ‘improving’ mindset, had ‘enclosed’ land and begun to cultivate it individually.

 At the time, agriculture had begun to develop rapidly throughout France, though most notably in Flanders, in the north-east. Population increase and rise in the demand of food-grains had set off an Agricultural Revolution in countries like Holland, England, and Belgium, and that impacted upon the French agricultural situation. The minister Turgot’s enthusiasm, the influence of the Physiocrat economists, and the experimental initiatives of agricultural scientists had led to the spread of knowledge of new cultivation methods and practices among the French population. This helped in doing away with age-old and inevitable fallowing and led also to conversion of infertile land into arable. Agricultural production increased by almost 40% between 1725 and 1789. There were two main reasons: first, increase in cultivation of high-quality food-grains and cash crops like grapes, and second, regional specialisation in agriculture and the consequent tendency towards the creation of a large internal market. Development of communication system and means of transport (like in Languedoc, Burgundy, Provence, Brittany, and Auvergne) and development of the irrigation system (like the Canal du Midi in the south) helped lessen cost of agricultural production and gave a boost to the marketing of agricultural products too.

 As an inevitable consequence, prices of agricultural products plummeted, as much 60-100% between 1730-39 and 1780-89. But this itself became a problem for the average French peasant. Increasing production and productivity was possible only for landlords and rich peasants who possessed enormous tracts of lands and had also both enough money and people to engage in cultivation profitably. The small peasant, on the other hand, could take advantage of the situation only if he had switched to cultivating cash crops and work as labourers on others’ lands too (because agricultural wages went up by 25-30% in the period). However, increase in population at the same time – 1700-1770: 20 million to 25 million – became an impediment for him. Because, the same period saw an increase in agricultural rents by 142 % and the state’s and landlords’ revenue demand by 60% and 25-30%. The average small peasant would have benefited if he rented more from the landlord, which he obviously could not because of his straightened financial condition; hence, the little parcel of land he rented increasingly became inadequate to keep body and soul together in an era of population increase and price rise. Agricultural commercialisation and surplus production may have benefited landlords, rich peasants, and city dwellers, but certainly not the average poor French peasant at the end of the 18th century.

***Industry and Commerce in 18th Century France:***

In this period, the increased marketing of agricultural produce and the expansion of agriculture-based industry led to increase in jobs and incomes of people too. Large scale grain-milling, wine-production and so on, and their distribution and marketing resulted in the proliferation of market-settlements like Nord, Franche-Comte, Brittany, Gascony and so on. Massive profits from exports to Italy, the German states, Spain, and West Asia resulted in the growth of ports like Bordeaux and Marseilles. This business was conducted in only French ships, which led to the massive expansion of the French shipping industry. Also, the iron industry of Le Creusot, the mining industry of northern Loire, the cotton industry of Lille, Amiens, and Lyons, the wool industry of Rheims – all these contributed to the creation some major industrial zones too.

 However, although foreign demand resulted in prosperity, there was still little internal demand for French industrial products. The main reason was that a ‘national’ market, integrating all the regions of the country into a unified whole, was still to develop in France. France was yet to emerge into the modern nation-state, hence the medieval practice of local laws, taxation, and administrative autonomy continued unabated. This situation posed serious difficulties for the distribution of industrial produce and the growth of an independent and enterprising commercial class. Especially, the harassment of business by administration was rampant. Also, because the medieval guilds and their rules still ruled supreme, it was impossible to undertake novel ventures in industry as permission for that was not forthcoming. Also, unlike England, no modern banking and credit system had grown up in France to bail out the entrepreneurial class. Again, in the medieval atmosphere of France, looking for and taking advantage of situations, and profiting thereby, was still looked down upon, and this was another, socio-psychological, obstacle to the proliferation of modern industrialism.

 In the situation, except for some export-oriented production centres, the French industrial scene still continued to be essentially medieval in nature. On the one hand, certain urban industries fulfilled the needs of the royalty and the aristocracy. But, because it functioned under the strict rules of the guild, because it was dependent upon privileges granted by its patrons, and because it therefore frowned upon all innovations, change was impossible in this sector. In any case, the total demand of the wealthy section of French society was too meagre to bring about revolutionary changes. On the other hand, there used to be the rural industrial centres, based on the traditional cottage industry run by the poor village artisan. It was impossible for him to bring about any industrial change either. He produced little, for the demand among the poor villagers was little; also, much of his time, labour, and income was siphoned off by the landlord and others. Hence, there was little capital or energy, or for that matter any valid reason, left for him to initiate changes in this industrial sector.

1. ***Prospects and Problems in the Revolutionary-Napoleonic period:***

***The Economic Effects of the Revolution of 1789:***

Between August 1789 and March 1791, on the basis of several laws enacted, feudalism was abolished in France. Meaning, people were once and for all freed of onerous feudal laws and taxation; the Church too lost its right to impose taxes on the people. The guilds were divested of their special privileges, and thus the industrial sector was finally freed of its domination too. The peasants too were awarded the freedom to produce whatever they desired. The aristocracy was initially divested of only its seigneurial rights like hunting, collecting taxes at markets, and its monopoly over mills, bakeries, and breweries; it continued to enjoy its real rights of collecting taxes from land, which it now used as a reason to demand and collect compensation for its former peasant-subjects’ freedom from feudal bondage. But this too was taken away when the riots of La Vendee and Brittany in 1793 threatened to develop into full-scale civil war. The birth of the independent peasant, free form all feudal obligations, may be regarded as one of the greatest and most remarkable achievements of the French Revolution. Incidentally, France became the first major nation to abolish slavery when The Reign of Terror initiated the process in the colonies; slaves were liberated by a law of 1793, but for which they paid no compensation to their former masters.

 Reform of prevailing local administration was another notable aspect of the Revolution. All the numerous provinces, estates, and *parlements,* with all their special and peculiar privileges, that had coming into being in the feudal era, were swept away; their place was taken by eighty-three *departments* of more or less equal proportion. The intention was to foster decentralised administration at the level of the *departments* and city councils by citizens; however, soon the influence of Paris came to be felt everywhere. All internal customs barriers which had hitherto prevented free movement of goods were done away with; numerous local taxes were abolished too, salt tax being the chief among them. Also, the privilege of the nobility being immune to paying taxes was scrapped; a rational taxation system was established in its place, though it could not be functional immediately due to the tumultuous Revolutionary situation. Determining the amount French national debt was another important task undertaken during this period.

 Numerous rules and conventions about weights and measures had come to exist over a long period of time and had posed formidable obstacles to French national economic growth. The National Assembly took the first step in this direction; the Convention finally introduced the metric system in 1795. This made trade with other countries relatively easier, though the older conventions continued to linger up to around 1840. The decimal system was employed to reform French currency too; the modern *franc* took the place the traditional *livre*. To promote modern industrial growth, the state introduced patent laws, attempted a collection of new technologies, and introduced technical education. In 1791, the National Assembly awarded innovators a fifteen-year right over their inventions. In 1798, the Directory established a science and technology museum. To train state engineers, a mining institute and a polytechnic institute in Paris were established in 1793 and 1794, respectively.

***Napoleonic Reforms:***

Napoleon’s coming to power speeded up the agenda of modern economic growth that the Revolutionary leadership had already undertaken. Through various legal steps, he created an atmosphere that could be conducive to business enterprise and competition, help in optimal utilisation of nobles’ lands, encourage proper application of national resources, and inspire the growth of a modern production system. Moreover, this spilled over into the areas France had captured in Europe, which gave the French bourgeoisie additional encouragement.

 To foster growth, Napoleon favoured state control over the national economy; to this end, he brought about a qualitative change in administration at the local level. He retained the newly formed *departments* but curtailed their administrative powers; to bring them firmly under central administration, he appointed *Prefects* whose authority was much greater than that of the earlier *Intendents*. However, more relevant to this discussion is *Code Napoleon* – the emperor’s internal reforms – whose positive impact was felt on French national economy in many ways. During the *ancien regime* of the Bourbon monarchy, there existed a peculiar legal system, actually a mix of ancient Roman law and French local conventions grown over time, a hotchpotch affair that neither the Convention nor the Directory had been able to bring order to. On the other hand, not only were Napoleon’s reforms successful in France, they became the basis of a modern society and a developed economy elsewhere in Europe too.

 The Revolutionary ‘sacred right to freedom’ continued to exist during Napoleon’s time, and now became the basis of the new ideal of ‘careers open to talent’ in the fields of business and professions alike. But Napoleon infused it with discipline and control; to this military expert, the entrepreneur was now likened to an army general and his worker a mere foot soldier. It soon became the task of the police to keep workers under surveillance; and after 1803, it became mandatory for every worker to possess an official proof of identification. A 1791 regulation forbidding trade unionism was reiterated and uniting to demand rights and striking work came to be regarded illegal. This proves that the emperor came to regard the enterprising bourgeois and his investment to be the very foundation of the national economy. This is why he was eager to protect the right to property of the individual, though for the sake of national interest he also retained the state’s power to confiscate such property with proper compensation.

 Creation of a sound financial system was among Napoleon’s chief achievements. The Revolutionary leadership did abolish the burdensome and irrational taxes of the *ancient regime*, but had not instituted any alternative taxation system to augment state income – the result was massive inflation soon after the Revolution of 1789. Napoleon introduced a dependable currency system; he also increased taxes on certain commodities like salt, tobacco, and wine. He did not introduce any personal income tax; rather, he imposed the burden of war expenditure on the areas he conquered, like Holland, Italy, the German states and so on. To further strengthen the national economy, he established *Banque de France* in 1800. Incidentally, all three banks established at various times in the 18th century – *John Low’s Bank* in 1716, *Caisse d’Encompte* in 1776, and *Caisse des Cowptes Courants* in 1796 – had failed to contain inflation. The initial capital of *Banque de France* was fixed at 30 million *franc*, of which the state provided 5 million. The chief responsibility of this bank was to pay the interest on the state’s credit; in 1803, it was also awarded the sole right to issue paper currency and establish and control provincial joint-stock banks.

 Proper and dependable means of communication and transport, so essential for the development and functioning of an economy, was another of Napoleon’s priorities. He sought to resolve this one major issue that the Revolutionary governments that preceded him had failed to address, by a directive in 1811. The construction and maintenance of the major arterial roads became the responsibility of the central government, and the responsibility of the less important and provincial roads fell on the *Departments*. Although these were constructed mainly for military reasons, they could not but have a positive impact on the French economy. Napoleon did not ignore education either. Although the technical schools during his reign ultimately became military establishments, a new kind of school, called the *lycee*, greatly stressed on science and mathematics. To encourage new techniques and improvement of existing ones, the state instituted a system of awards to enterprising inventors and innovators.

***Napoleon’s Continental System:***

It has been said about Napoleon’s Continental System that it was not anything novel. For, to ensure the monopoly of French goods in the internal market, ban on imports and high import duties had been imposed many a time in the 18th century. For instance, the Jacobins held that Britain could easily be defeated in war if her trade was seriously damaged; this is why they banned British imports not only in France, but also the areas they captured, like Holland, Rhineland, and northern Italy. France followed this strategy against Britain both before and after the Treaty of Amiens. In 1806, Napoleon prevented British commodities from entering the north German ports; Britain retaliated by imposing a similar embargo on French merchandise. In the same year, he prevented France, Italy, Switzerland, and the Rhine Confederacy from trading with Britain by the Berlin Decree. By the Treaty of Tilsit of 1807, Napoleon’s ally, the Russian Czar, agreed to impose a similar embargo on British goods in his realm. Napoleon’s Milan Decree, the same year, declared that all ships engaged in trade with Britain and her colonies would be confiscated if they entered any port under the control of France.

 It is not easy to calculate the outcome of the Continental System; but all estimates point out the fact that it did not harm Britain as much as Napoleon had hoped it would. Only a third of the commodities produced in Britain entered the Continent, and hence the Napoleonic embargo did have much impact initially. But when the USA, where Britain exported another third of its products, too imposed a ban on British goods, it did have a serious negative impact. Also, soon Britain’s own imports began to dwindle in volume. Yet, she was able to continue to hold her superior position in the international arena; the evidence may be found, for instance, in her continuing to import the amount of raw cotton she used to always, in the increase in the production and export of her coal, and in the increase in the number of looms in the cotton industry. The reasons are: increase in wartime demand of certain commodities, increase in illegal trade to evade the Continental System, increase in import of wheat and wool from Canada, and the help received from Britain’s allies. Crouzet estimates that the rate of economic growth in Britain did slow down due to Napoleonic embargo, but to ensure greater success, the emperor would have had to persist with the System and should have foregone his adventures in Spain and Russia. Also, France herself failed to strictly impose the embargo, her allies were ultimately lukewarm in their response and support, and Britain continued doggedly to seek out opportunities to defeat Napoleon’s Continental System.

 The 18th century customs policy had secured for French industry an internal market and had also helped in acquiring an external market. The transport system and the mining industry in the south-eastern France developed directly because of this policy. Also, certain imports from the colonies helped in the growth of the sugar industry and the numerous distilleries in Bordeaux region. But this colonial trade was completely lost when, to successfully contest the Continental System, Britain took to the blockading of French ports. All French industries profiting from this trade – shipbuilding, cotton, sugar distillation, silk, paper, and some small and dependent ancillary industries – were now seriously harmed. It is also held that the wartime situation, when everything was geared to meet the demands of mainly war, harmed the natural growth of several French industries generally. On the other hand, it is also true that this demand sustained the growth in several industries like cotton, chemical, and technology.

1. ***Restoration and Return to Protectionism:***

***Economic Restructuring in the Period c.1815-c.1830:***

This is the period when France is regarded to have turned around, economically. The Revolution of 1789, Revolutionary and Napoleonic wars, and the Continental System had had a debilitating effect on the French economy. These eventually led to France losing the areas she had captured: Holland, Belgium, northern Italy, and the German states west of the Rhine. She lost her colonies and the extremely profitable sugar trade too. Also, the agricultural slump in 1816-17 and the economic crisis of 1827-30 created widespread unrest among the French people. And yet, at the same time, the major part of the government’s income had to be spent on war indemnity and national debt. After the war stopped, an abrupt fall in demand let to a downslide in the two major French industries, iron and cotton. Cutting off of relation with Britain due to enmity meant that France was deprived of the technology that developed there. Despite all this, however, historians detect a slow but sure turnaround in economic growth and industrial enterprise, especially towards the end of the 1820’s decade, that proved to be the groundwork for the next regime. Agricultural growth, improvement in communication and transport, upgradation of technology, and the development of credit and insurance are some of the major areas of advancement around this time.

 Developments in spheres like external trade and iron and cotton industries help understand the nature of industrialisation in this period of Bourbon Restoration. Initially, numerous family enterprises grew up using locally available mineral ore; most them were rural families which ventured into industrial production to supplement and augment income from agriculture. Despite the smallness of these ventures, in 1819 France was able to produce up to 1,125,000 tons of iron and 74,200 tons of steel. This ultimately led to the birth of several big ventures whose combined capital, in 1829, was as much as 46 million *francs*. Coke furnaces and other modern methods of production were introduced in iron production in this period. Textile industry was another major area of growth, especially in the cotton textile industrial areas outside of Paris like Normandy, Alsace, and Nord. If the industry consumed 18 million kilograms of raw cotton in 1822, by 1827 this went up to as much as 30 million kilograms. The numerous rural cotton and woollen textile areas continued to operate as before, on the basis of age-old cottage industry. There was a growth in the production of raw silk and wool internally, as wartime import deficit continued into this era. Construction, leather, chemical, and sugar distillation were some other industries where there was some improvement too.

 Yet, French external trade failed to make much headway in this period; between 1816 and 1830, the tonnage increased from 600,000 tonnes to just around 800,000 tonnes. Also, more industrial produce was imported than was exported; this was mostly due to France’s loss of her colonies. And, this is the reason why the French state took to the policy of economic protectionism, erecting high import tariff walls to allow native industries to survive in a situation of zero foreign competition. However, with a secure internal market, French entrepreneurs displayed no inclination to capture markets abroad. Growth, therefore, reached a stagnation point in this period.

***Developments in the Period 1830-1848***:

Louis Philippe ascended the French throne in 1830; Bourbon Monarchy was replaced by the so-called ‘July Monarchy’. Between 1830 and 1848 French industries made marked improvement, and the credit undoubtedly goes to the new emperor. He came to power in the midst of the prolonged 1827-32 economic recession when food shortage, price rise, and downslide in the textile industries had created a lot of discontent among the people. It could be said that, in the situation, Louis Philippe played the expected traditional role of the French monarch by taking a positive attitude to rejuvenate the economy. On the other hand, what was new was that this monarch was supported by a bourgeoisie that played the key and active role in the rejuvenation of the French economy.

 The improvement of the credit system that began in the earlier period, now continued; but, the main role, in this era, was played not by the Bank of France but the private banks of Paris and the provinces. These banks, by taking care of the capital needs of rich landlords and owners of large industrial enterprises, by providing credit to businessmen in general, and by acquiring credit for the state, played a very crucial role. Some of these banks even established themselves in particular fields of operation. For instance, the Rothschilds acquired and invested capital for only the railway companies and the government, the Hottingen family invested in only foreign trade, and the Lafitte family invested in mainly the French heavy industries.

 During the reign of Louise Philippe, marked development of water and steam power led to further growth in the iron and steel and the textile industries. Whereas the value of total industrial production in 1827 was 1340 million *francs*, by 1846 it reached 4000 million *francs*. Between 1830 and 1846, raw material consumption in the cotton industry increased from 32 million kilograms to 65 million kilograms. However, in this era, the typical factory was not the large one but the one that employed up to fifty labourers on an average. Expansion of railways and increased application of modern technology led to the growth of the modern iron and steel industry too in this era. Like in the cotton textile industry, the typical factory was medium and small in size, and mostly employed traditional methods of production.

 Development and expansion in communication and transport was another area where Louis Philippe’s government exceled. Numerous roads were constructed, to connect the remote and rural areas with the key centres, all over the country; alongside were built over 250 bridges too. The total cost incurred was 478 million *francs*. The 1836 Highway Law made a 3-day labour mandatory for all physically capable persons. All this hastened the movement of commodities and rural industries were especially benefited. Also, there came up between 1830 and 1848, a canal network measuring around 2000 kilometres and costing around 300 million francs. However, efforts to introduce steamships on internal waterways and in oceanic trade, did not make much progress. Although its 1.5 million tonnage made it the third largest in the world, it fell way short of that of Britain (tonnage, 3.5 million) and the USA (tonnage, 2.5 million). In comparison, there was significant improvement in railway communication; at first in 1827, between the industrial hub of Saint Etienne to the port of Andrezieux.

 The initial initiatives were taken by businessmen who acquired capital themselves to build railways to facilitate the movement of commodities at the local level. However, there were others who soon understood the massive advantage of a nation-wide railway network over local-level, short-distance, and isolated railway lines – Enfantin, Chevalier, Pereire, and Rothschild, all followers of the socialist thinker, Saint Simon. It was chiefly due to their influence that in 1833 the French Legislative Assembly took two decisions, both of far-reaching consequence for railway development in France. First, a sum of 500,000 franc was earmarked for railway planning. Second, not the Emperor but the Legislative Assembly was made responsible for the expansion of railways. Also, experts were despatched to Britain and the USA to the understand the details of building and operation of railways in these two countries. It was decided to develop railways for mainly commercial and military purposes. The question of the relative roles of the state and private companies, however, remained; the 1842 Railway Act resolved it by ruling in favour of a joint venture in the field. It was decided that the state would bear the cost of land and one-third of the infrastructural cost of tracks, tunnels, bridges and the like. The companies, however, had to take the important responsibility of managing and running the railways. There was some delay in resolution of issues between the government and the companies, which naturally led to the delay in the speedy expansion of the railway system. Hence, whereas by 1842 Britain and Germany already had 3600 and 2400 kilometres of tracks respectively, France could build up to only 885 kilometres. A further Railway Law of 1846 made easier the progress of railways in France, as a result of which there was an expansion up to 1830 kilometres the very next year. But the commercial crisis of 1847 and the political upheaval of 1848 impacted negatively on this rate of progress.

1. ***Napoleon III and His ‘Booster’ Policies:***

In France, industrial development gained momentum markedly between the years 1851 and 1870. Beginning with the fall of Louis Philippe in February 1848, labour unrest in June that year, the election of Louis Napoleon as President in December, the simultaneous and concerted rise to popularity of the liberals and the socialists, and up to 1851 when Napoleon III acquired absolute power as the new French emperor – these four years were a period of enormous political tumult and consequent economic slowdown. In comparison, it would not be entiurely an exaggeration to liken the period c.1851-c.1870 to the ‘take off’ as described by W. W. Rostow, a brief period when there appears to be a sudden spurt industrial development. It would not be entirely wrong to liken this period to Alexander Gerschenkron’s ‘Substitution Process’ too, when the French emperor, in a bid to realise his political ambitions, took several innovative and constructive steps to speed up industrialisation in France.

 Like Napoleon I, his nephew sought to inspire his people by declaring his aim to restore the lost French empire and rejuvenate lost French glory. Also, just as Napoleon I achieved popularity by initiating a programme of economic recovery in a period of recession, Napoleon III too realised that economic recovery was as important as an aggressive foreign policy to legitimise his position among the French people. The eagerness of the state and the many subsequent positive steps it took energised the French bourgeoisie too, to undertake some major novel enterprises, which in turn helped rejuvenate the national economy. Alexander Gerschenkron has identified this attitude of the state as the single most significant characteristic of the time. First, it developed a proper industrial infrastructure by investing in railways and other public works. Second, the completely novel banking system called the *Credit Mobilier* that grew up in this period to mobilise the massive amount of capital essential for industrial growth would not have been possible with the state’s support. Third, by undertaking a novel trade policy, Napoleon III pushed French industry towards an extremely stiff foreign competition, with the intention of making it strong enough to stand on its own and without state support.

 Demand for industrial commodities had begun to increase in France from the 1830s, a time from when both population and per capita income had begun to grow steadily. A rapid and dependable means of transport for felt to be necessary for further industrial growth and this formed the background to railway-thinking and railway-building in France. Yet, by 1848, only 1830 kilometres of railway tracks could be built. One reason is that, in an underdeveloped economy like France, businessmen considered it imprudent and hence hesitated to invest in railways. Also, the damaging of railway property during the Revolution of 1848, the unstable condition of the Second Republic itself, the apprehension of nationalisation of railways, the militancy of the labour movement of the time, and the downward trend in commerce – all these contributed to considerable loss for the railway companies. On the other hand, it was impossible for the state alone to provide the massive amount of capital needed for the further extension of this transport system. Yet, a pro-active government did not confine its role to merely acquiring land for the railways, but also adopted the very practical policy of unification of railway tracks and companies to avoid unnecessary duplication and wastage of money and manpower. Moreover, Napoleon III’s government adopted the measure called the ‘Guarantee System’, by which it assured private companies financial aid if they did not earn a certain minimum year-end profit over their expenditure to build and operate the railways. The government also took upon itself the responsibility to provide capital when necessary; for instance, it came up with half of the 200 million *francs* needed to build the railway track from Paris to Strasbourg. In the period 1852-57, thirty railway companies were merged to create just six large companies, each of which acquired the monopoly right to operate singly over large areas; hence, during the economic crisis of 1857 it was easy for the government and these companies to cooperate and jointly tide over the difficulties. The expansion of railways helped create a genuinely country-wide ‘national’ market, made easy the movement of both raw materials and finished products, created further demand for industrial commodities, and by its spread-effect helped in the growth of more and more ancillary industries.

 Like all other countries, France too needed to develop an industrial infrastructure – transport, ports, fuel etc. – without which the Industrial Revolution would be impossible. This, in turn, needed a massive capital outlay. Yet, in an underdeveloped situation, people looked with suspicion towards entrepreneurs and the consequent fear of losing money prevented them from investing in business. Also, one must remember that businessmen, believing it to be the government’s responsibility, rarely ever invest in infrastructure development. It was to overcome this problem of shortage of capital that there was born in France, in 1852, *Credit* *Mobilier*, a bank founded by the Pereire family, but which actually came to denote a novel banking system altogether. Whereas the older banks acquired money from people to only provide credit to the government, the role of the new banks was to invest in, and provide long-term credit to, potential business enterprises in the country. These new banks not only provided the French government money during the Crimean War, but also contributed to the re-building of Paris, the merger of railway companies, the expansion of French foreign trade and agriculture and so on. The total investment in business enterprises by the *Credit Mobilier* went up to 125 million francs by 1864. Paris soon became the financial hub of Europe. Needless to say, all this would not have been possible without the assurance that Napoleon III provided to business in particular and confidence that he inspired in people in general. *Darmstadt* *Bank*, the chief bank in Germany, was founded with help from the *Credit Mobilier*. State railways, mines, iron factories, and steamships in Austria were all funded by *Credito Mobiliaro* *Esporol*. The *Credit Mobilier* played an important role in the construction and expansion of railways in Switzerland and Russia too.

 Napoleon III’s measures to speed up industrialisation in France – like, the extension of transport system, the development of an infrastructure, and the founding of a new credit system – were all very effective and the initiatives of the emperor and his council of ministers highly commendable. But there was nothing really unprecedented about them, because such measures had been tried out both in France and elsewhere in Europe earlier. On the other hand, the policy of low import tariff that the emperor implemented in the 1860s had a much more revolutionary impact on the French economy of the time because France had never dared to follow such a policy after 1776. Also, although all his policies had ultimately been accepted despite some initial criticism, his decision to give up an age-old protectionist trade policy brought forth tumultuous opposition in the country. To be fair to Napoleon III, it must be admitted that he had given the indication that he was about to embark upon a new way as early as in 1853. Finally, armed with a special clause, the emperor signed a trade treaty without England without the prior approval of the Legislative Assembly – the Cobden-Chevalier Treaty of 23 January 1860. According to the treaty, England (later, Germany, Switzerland, Prussia, and Belgium too) could export to France wine, iron and steel, machinery, textiles and so on by paying as little as 25-30% import duty. The emperor completely ignored the disapproval and opposition that this measure evoked in the country. However, he also simultaneously approved of a fund of 40 million *franc* for industry, and allowed financial aid for factory upgradation at a minimal rate of 5% and within a year around 200 applications for such financial aid received approval. The two major industries of France, textile and iron and steel, received 15 million francs and 1.5 million francs respectively. The spurt of growth in the French industries, especially iron and steel, in the 1860’s decade, demonstrates how Napoleon III’s trade policy rudely but successfully shook the French out of protectionism-induced stupor and compelled them to bring about changes not only to stay afloat but also succeed in the face of stiff foreign competition.

1. ***The Situation in the Period 1871-1914:***

It is commonly regarded that French economic downslide began with the defeat in the Franco-Prussian War of 1870-71, and especially due to the loss of the Alsace-Lorraine industrial region in that war. There is an element of exaggeration involved in this. It is true that the rate of growth of the French economy post-1870 compares unfavourably with those of contemporary USA or Germany or even the France of the period 1815-70. However, this does not mean that economic growth totally stopped in this period of time.

 The data on workforce in various fields supports this last assumption. Whereas agricultural workers comprised up to 53% of the total workforce in 1870, by 1913 it had gone down to a mere 37.4%. Evidence of industrialisation is sought in the comparative percentage of workers in various sectors of an economy; by this yardstick it is amply clear that French industrialisation continued to expand unabated in the post-1870 period. Annual productivity too increased slowly but steadily at the rate of 1.8% in the period 1896-1913. Per capita production and per capita income doubled at the same time, as did increase French national savings and French capital investment abroad. When competition made it difficult in the European market, the colonies of Indo-China and west Africa made things easier for France.

 The rates of annual growth in the three major industries in France in two periods of time were as follows (%): 1860-1892: iron and steel 2.58, coal 3.24, and cotton 1.52 as compared to 1892-1913: iron and steel 4.01, coal 2.08, and cotton 1.92. France made rapid strides in the production of chemicals (soda, sulphuric acid, dyes etc.) and electrical goods (the French company Breguet successfully competed with the American company Thomas-Houston and the German company Siemens), both of which were the special preserves of Germany and the USA. Aluminium production by the electrolysis method, invented by Herault, was one of the significant inventions of the time. The French companies Pauhard and Peugeot excelled in the production of motor parts, competing successfully with the American and German giants Ford, Otto, and Benz.

1. ***Summary and Conclusion:***

18th century France was among the politically most powerful and economically most prosperous countries in Europe. Also, the necessary pre-conditions of a modern, capitalist economy, like a large enterprising class, capital, demand for agricultural and industrial produce abroad, a large labouring class and so on, were present. However, the medieval, feudal political and socio-economic structure thwarted the successful functioning of these pre-conditions and proved to be the major obstacle to the growth of industrial capitalism. Because exorbitant feudal exaction kept most of the population at a subsistence level, there was no genuine and large-scale demand for industrial commodities within the country. The feudal nature of agriculture seriously limited investment in the field and because it kept the peasant tied to land, the large and free working force necessary for industrial growth could not be procured. Feudal society and mentality looked down upon enterprise and therefore the capital needed for modern industrialisation was not forthcoming. A feudal political edifice was nurtured to keep intact the feudal socio-economic structure in place, a political scenario where nobody except the aristocracy enjoyed any right whatsoever.

 Although the Revolution of 1789 did away with these obstacles inherent in the feudal *ancien regime*, the post-Revolution war-torn situation itself gave birth to newer problems. There is no doubt that by abolishing hereditary privileges and by creating a situation that favoured only the enterprising, the Revolutionary leadership and Napoleon made economic development and growth a plausible prospect. Yet, in the war situation, foreign trade was destroyed, normal industrial activity dwindled as industry was geared towards meeting only wartime needs, and in the uncertain situation the bourgeoisie took to only speculative activities for quick returns. Also, to get even with the oppressive aristocracy and in their desire to acquire social esteem, the latter invested more in land, and turned itself into a new landed class, thereby keeping important investment away from business. On the other hand, the peasantry, once its age-old demand for land ownership rights was rewarded by the Revolutionary leadership, turned into a sedentary class with no interest in agricultural innovation. This hindered economic growth and industrial development too. On the one hand, low per capita income and low purchasing power among the peasantry failed to create the massive demand for commodities so essential for an Industrial Revolution. On the other hand, as most of the population continued to be dependent upon agriculture and therefore as agriculture itself continued to be the larger sector in the economy, this boded ill for modern industrial development in France for a long time.

 As England dominated the international market with its superior technology and low-priced commodities, France had no option but to adopt a protectionist policy after the Restoration of 1815. Indeed, this was the demand of the new bourgeoisie as well as the restored aristocracy. This is why the character of industrial development in France in the period 1815-48 differed significantly from that of England. Because the majority of the French population was poor and with little purchasing power, French industry could only target the demand of luxury products among the rich within the country and elsewhere in Europe. Therefore, the emphasis continued to be on physical labour and artisanal skill and the use of modern technology was the exception. Some businessmen attempted to meet the demand of the growing urban middle class and the rural population too, and built numerous small factories all over the country. Therefore, large industrial units of the time were the exception and most enterprises continued to be run by families. However, as population and income continued to grow at a steady rate, especially in the post-1830 period, expansion of the industrial sector and increased financial investment became the need of the time. But the credit system necessary for this was still in its infancy, and hence the largest sector of the time, the railways, could not develop as much as it was necessary. Investing in infrastructure was still disliked by the business class, and hence it remained to be taken up by the government.

 The unprecedented economic growth during the Second Empire, especially the boom period of 1852-57, was due to both favourable objective conditions and state enthusiasm and initiative. As a matter of fact, import of a massive amount of bullion into Europe, expansion of several colonial empires, and the improvement in international transport aided economic growth in other European countries in the same period too. The special measures taken by Napoleon III must be, therefore, given due importance. Not all agree to characterise this period in France as Rostow’s ‘take off’; however, most historians like Clapham, Crouzet, Landes, Trebilcock, Kemp, and Henderson do regard the emperor’s measures as *the* most important factor of French economic growth of the time. Especially, his bold tariff policy has been regarded as the single most important factor behind the rapid growth in the industrial sector in this period. It has also been commented that the *Credit Mobilier*, behind which stood the emperor’s government, infused a moribund industrial and business order with the necessary life-blood. In short, this was the period which witnessed the beginning of a qualitative transformation of the French economy – that is, for the first time, the industrial sector began to supersede the agricultural sector in importance and significance.

 The trend towards industrial growth that began early in the 19th century, continued unabated throughout the century, despite periods of political upheaval, wars, and recession. Increasingly, the French state and the bourgeoisie began to collaborate and became partners in economic growth in the country. The steady increase in population and demand had its role too, in the process. The loss of an important industrial belt to Prussia in the war of 1870-71 was a negative factor. However, of greater importance was the dependence of a large section of the population upon agriculture and this continued to be an impediment to greater industrial expansion and faster economic growth. Indeed, this may arguably be called the single most significant characteristic of the Industrial Revolution in France. Historians have normally spoken of the ‘long drawn-out and piecemeal character of French industrialisation’.

***Questions (probable):***

1. Briefly explain Alexander Gerschenkron’s ‘Substitution Process’ hypothesis. (2 marks)
2. How did the socio-economic and political structure of the *ancien regime* hinder modern industrial growth in France? (4 marks)
3. Discuss briefly the course of industrialisation in France in the period 1815-1850. How did it differ characteristically from that in England? (8 marks)
4. Discuss Napoleon III’s economic policies. How did they help speed up the process of industrialisation in the country? (8 marks)

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