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**TOPIC: THE FOUR INDUSTRIAL REVOLUTION; INTRODUCTION, SIGNIFICANT CHANGES, MERITES AND DEMERITS**

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**TITLE PAGE**

**THE FOUR INDUSTRIAL REVOLUTION; INTRODUCTION, SIGNIFICANT CHANGES, MERITES AND DEMERITS**

**PREFACE**

This work talks about all the industrial revolution that contributed in the growth of science.

**ACKNOWLEDGEMENT**

I give glory to God and I am grateful to my family for their love care and encouragement

Introduction to Industrial Revolution

The first recorded use of the term “industrial revolution” was in a letter in 1799 written by a French envoy *Louis-Guillaume Otto*. Industrial revolution means a significant or notable transition or technological advancement within a certain period of time. According to Wikipedia, Industrial revolution is defined as the transition to new manufacturing process. The first recorded sign of industrial revolution was in Great Britain. It was also said to be a major turning point in history in activities that influenced our daily lives. The causes of industrial revolution still remain a subject to debate till this day. Some attribute it to vast amount of geological mineral resource found Europe while other glides towards the loss in popularity in feudalism. The industrial evolution was categorized into different timelines as it occurred.

The major industrial revolution was divided into four different timelines namely

1. The first industrial revolution
2. The second industrial revolution
3. The third industrial revolution
4. The fourth industrial revolution

**The First Industrial Revolution**

The first industrial revolution started at the end of the 18th century and ended at the beginning of the 19th century. The biggest change notable to this industrial revolution was mechanization. Mechanization took place in a lot of industries like in the agriculture industry, mining industry, transportation industry and so on. In this revolution inventions such as the spinning jenny used for weaving clothes were used to advance the textile industry. Our society would not be where it is if not for the invention that took place in the first industrial revolution. On the other hand, if the industrial revolution would have not happened, we would not have been facing this environmental and climate damages.

Merits of the first industrial revolution

1. Before the era of the first industrial revolution, jobs were based on education studies, family tradition, or a unique talent that someone has. The first industrial era allowed people earn a living in a way that was different from the past.
2. The first industrial revolution was an era for creation and innovation.
3. This era allowed the improvement of quality and mass production of products over short period of time.
4. This revolution incited the beginning of healthy competition among factory and industry owners
5. Power was of the survival of a certain commodity was shifted from the businessmen to the consumer.

Demerits of the first industrial revolution

1. With coal being among the first minerals discovered in the first industrial era, the impact on the planet is still evaluated by the scientist.
2. People who worked in the city were perceived to be rich. Because of this wrong ideology, urbanization started. People started to move from the rural areas to urban areas to search for their dream jobs.
3. Although this era was the parent the other working eras, very low regard was placed on the health of the workers in the factories.

**The Second Industrial Revolution**

The second revolution started with massive technological advancements in industries that helped the emergence of a new source of energy. It was characterized by electrification and mass assembly lines. Everything grew in scale as new technological advancement and the development of the combustion of engine system initiated the use of sources of energy namely electricity, gas and oil. Other developments that was invented in this era are telephone and telegraph which were used for to improve communication. The development and improvement of the steel industry lead to the invention of automobiles in the late 1800s and the invention of airplanes in the early 1900s. The second industrial revolution was important because jobs were created and the industry was modernized. The British empire lost its supremacy, the financial capitalism and international trade was created. This revolution was able to strength the first revolution.

Merits of the second industrial revolution

1. In this era, the big companies and the labor market were born.
2. New sources of energy were discovered such as electricity and crude oil.

Demerits of the second industrial revolution

1. The second industrial revolution was initiated the comparison between man and machine. The machines replaced man at work so the worker had to start working in the weekends to maintain the machines that did all the production for a minimum wage.
2. There was increase in production pf pollution due to the increasing amount of industries being created.
3. There was more pressure on land ownership because one could hold the presence of natural resources.

**The Third Industrial Revolution**

At the second half of the 20th century we see the emergence of the another untapped source of energy, Nuclear Energy. This brought forth the rise of electronics, telecommunications and computers. The third industrial revolution opened doors to space expeditions, research and biotechnology through the new technologies. Advancement in telecommunication led the way for a widespread globalization, which in turn enabled industries to offshore production at low cost economics and racialize business models worldwide. The third industrial revolution is also known as the “Digital Revolution”. It is characterized by the spread of automation and digitalization through the use of electronics and computers.

Merits of the third industrial revolution

1. With the evolution and digitalization, some goods and products becomes more affordable and accessible.
2. This industrial era enabled the refinement of certain medical instrument and mass communication, thereby significantly improving the medical field.
3. With industrialization, different field were created or discovered thereby giving rise to specialist in different professions

Demerits of the third industrial revolution

1. With the promise of better wages, there was massive rural to urban migration thereby leading to overcrowding of cities and industrial towns
2. Excretion is a major part of the human system. So with rising populations in the urban areas, there was also increase in pollution. This lead to a lot of different unknown illnesses.
3. Human right speaker grew a lot here. Due to the increase in population, there was also a reduction in the number of available jobs. Being employed was a hassle and because of that, workers were working in poor working conditions

**The Fourth Industrial Revolution**

The fourth industrial revolution characterized by digitalization, digital transformation, personal connected devices, data analytics, AI technologies, automation and industrial internet of things(IOT). This is the age when lines between the physical, digital and biological spheres are challenged and industries all around the world are uprooted. The milestone of the fourth industrial revolution include large scale digitalization, the emergence of IOT networks and IIOT, machine learning, AI, predictive analyses and maintenance in industry setting, big data and clod computing technologies and advanced robotics.

Merits of the fourth industrial revolution

1. Because the significant improvement on the technology, productivity has been improved greatly
2. Technology has made possible new products and services that increases the efficiency and pleasures of our personal lives
3. The barriers to entrepreneurship has been lowered now. Entrepreneurs can now establish companies and test various products with low startups cost without the traditional prototyping methods.

Demerits of the fourth industrial revolution

1. The demand in high skilled worker has increased while the demand for workers with lesser skill has reduced. This form of inequality is what is being formed in the fourth era.
2. There are core industrial disruptions in the community. Example: taxis at this point are competing with Uber and Lyft. Because these two companies are using the resources to advance, they will be able to surpass taxi