A - Origin of Industry:

Upto the end of the 19th century Industry and Transport remained to a very large extent dependent directly on coal for the generation of heat and power. It was during the closing years of the last century when Hydro-electricity was investigated in India for the first time. But upto the end of First World War all the accessories and equipments for the electric fitting and generation were imported and not a single factory was established for the production of electrical goods before the First World War in our country. After the War few industrialists came forward to establish the factories for the production of electrical accessories to meet out the increasing demand for these products due to the expansion of electricity. But as a matter of fact the electrical goods industry in India was mainly confined to the production of few electrical goods upto the outbreaks of Second World War. As the figures show that 'In 1938-39 the value of the imports of electrical goods came to Rs.695086 - India's Basic Industries by P.T. Thomas, page 189.

The war brought about a diminution in imports and a rise in demand. The heavy war demand necessitated the production of electrical goods in bulk quantity within a short space of time. Therefore electrical goods industry in India came into existence in its fullest capacity within the period of Second World War.
Within this period a large number of new factories were established in India for the production of each and every type of electrical accessories to some extent.

The main reasons responsible for the slow progress of this industry in India up to the Second World War were as follows:

1. Most of the machinery required for electrical goods industry was imported from foreign countries.

2. Raw material required for the production of electrical accessories were mostly imported from foreign countries through import licenses to obtain which was a very tedious job during the British regime and hence very few people could be attracted towards this industry.

3. Indian people by nature being simple in their living did not pay any attention to the luxuries and amenities provided by electricity and were mostly apathetic towards the adoption of the use of electricity and this also provided a great handicap in the advancement of electrical goods industry side by side the risks and damages involved in the use of electric current in domestic use also detracted people away from it.

4. The most responsible cause for its progress is the late introduction of electricity in India and afterwards its slow experience.
As this industry started very late in India in comparison to other basic industries of the country, Aligarh Electric Goods Industry also started very late as against the other industries of Aligarh say lock industry, brass industry etc.

In the absence of any relevant information, it is difficult to trace out the definite period of the origin of Electrical Goods Industry at Aligarh. But however, it has been found out that the year 1927 may be taken as the starting point of Aligarh Electrical Goods Industry when Sri Ramji Lal came out as the founder of this industry at Aligarh who established the National Electric Co., Sarai Kutab for the production of electrical goods. The production of this company was only confined to ordinary brackets and very rough type table lamps.

The next attempt in this direction was made by Shri Girdhari Lal Saxena in 1930. Up to the outbreak of World War Second this industry did not make any progress in its production and very few firms or workshops were established. But during the War period several new workshops and factories of electrical goods were established, to fulfil the heavy war demand and they succeeded in holding the market.

Leaving at present, the discussion of stage development of the industry let us proceed further to analyse the main causes responsible for the location of electrical goods industry at Aligarh.
B - Causes of Location:

We can summarise the causes of localisation under the following heads for the sake of adequate and smooth description along with the details:

i) Availability of Cheap Labour:

Aligarh district is one of the most thickly populated districts of U.P as it is most fertile and cultivative district being situated in Do-Aba of Ganga and Jammuna rivers. This all makes the availability of cheap and abundant labour during non-harvest periods. Electrical goods industry is more or less a cottage and small scale industry in which labour factor plays an initial role due to the pre-dominance of manual and hand work. A particular sector of labouring population has acquired a respectable degree of specialisation in electrical goods manufacture and they pass and rather hand over this art from one generation to another. Most of the workers in their residential houses with the help of their family members and as these members grown up acquire proficiency within a short duration. This all results in the availability of cheap adequate and trained efficient labourers to this industry.

ii) Complementary Industries:

The simultaneous running of pre-existing Brass Industry, Lock Industry, Brass Building Fittings Industry have also helped in the development and location of this industry at Aligarh. It has been
an asset to the electrical goods industry of Aligarh that the
trained workers of these contemporary industries have been
available to the electrical goods industry the expert workers
of the moulding, filling and fittings and various other
mechanical processes etc., have been readily available here
for this very industry. The dealers of raw materials, such as
scrap brass, cast Iron Moulding materials and scrap Alluminium
etc., are also present at Aligarh since long. That is
why that its early start was easy to perform.

iii) Availability of Raw Materials:

One of the chief causes of localisation of industry in
Aligarh is the availability of raw materials. The existence of
the lock, Brass, and Building fitting industries in Aligarh has
rendered a great help for the availability of raw materials. All
the raw materials e.g. iron sheet, cast iron, scrap brass moulding clay,
chemicals etc., are available from the local dealers of Aligarh
who have been stocking them since long to fulfil the demand of
said industries.

Delhi, capital of India, is nearest to Aligarh, Delhi, along
with the capital is an industrial city and where most of the raw
materials required for the electrical goods are available of ready,
so that most of the materials i.e., chemicals, polishing materials,
wires and other raw materials and some tools are purchased which
are required for this industry by the electrical dealers from
here.
iv) Transport Facilities:

Aligarh is situated on the main railway line between Delhi and Calcutta. At the same time Aligarh Railway Station is as junction for connecting the Districts of Moradabad, Bareilly, Bulandshahr, Delhi and Agra. There are several metalled and unmetalled roads along with the Grant Trunk Road which facilitates convenient and quick transport vehicles etc. This is why that we get here so many private Bus Syndicates, Transport Companies along with the Government Roadways.

v) Availability of Electric Power:

In the beginning of the electrical goods industry of Aligarh was at a small scale, hand tools and hand work were more in vogue, but with the development of the industry the need for the electrical power became more and more genuine and vigorous. The development of Hydro-electricity in Aligarh is also a boom to this industry.

vi) Some other Factors:

Besides the alone mentioned facts some other factors have been responsible for the localisation of this industry at Aligarh. The easy availability of finance on easy terms from the Private Bankers and money lenders on personal securities along with commercial Banks has been responsible for the localisation of this industry at Aligarh. Though the commercial Banks advance loans only to the reputable concerns of electrical goods yet their help in this direction is also noteworthy for Aligarh electrical goods industry.
After the discussion of the above mentioned causes responsible for the localisation of this industry at Aligarh, we come forward to our next point say, stage development of the electrical goods industry.

C - Stages of Development:

The stage development of Aligarh Electrical Goods Industry may be divided into the following heads for the sake of elaborate details and adequate description of events in every period.

a) Pre-independence period
b) Post independence period.
c) First Five Year Plan
d) Second Five Year Plan
e) Third Five Year Plan, present position and future prospects.

A) Pre-Independence Period:  The preliminary work started in 1927, when the National Electric Company was started by Shri Ramji Lal. But it manufactured goods by means of time worn methods and tools and so could not survive for a longer time.

The real beginning of industry at Aligarh takes place with the foundation of a firm which is now known as Imperial Electric Trading Company. The proprietor of this firm, Mr. Girdhari Lal, once went to Delhi and there he saw the hotel some electrical items. He watched all the material closely and thought in his mind of some ways to produce those things in the country. At that time articles of electric were imported from Western Countries. Only the production
of building material has started at Ali'arh. Mr. Girdhari Lal took some samples (models) and became busy to get the electric goods produced within country.

After this upto 1940, Bi- Bath Electric Industry, Commercial Electric Company, Gupta Electric Industry etc., were established in succession. In 1940, one more firm was founded by Mr. J.S. Saxena.

During this period the position of manufacture was not economically sound because British Government did not like them prospering. They were not allowed licenses to buy raw materials from foreign and electric connection were not procurable. In such a situation, foreign electric goods were showing their superiority.

The Second World War gave a sort of impetus to this industry as there was huge demand of electrical goods in the market during War period. The War resulted in so many risks and difficulties in transport, the foreign countries, being predominantly preoccupied in manufacturing the war materials, foreign goods could not come to India in bulk quantity. These factors arose a wide scope for Ali'arh made electrical goods in the market. The result was that many firms for the production of electrical goods were established by Industrialists of Ali'arh during War time. The names of Misra Electricals Co., Kashyap Electric Co., Industrial Electric Corporation The Best Company, The Laboratory Electrical etc., are noteworthy in this direction.
This trend of market not only gave impetus to the establishment of new firms but also gave opportunity for the expansion of pre-existing firms of electrical goods. And in 1941 the Imperial Electric Trading Co., was granted electric current of 5 H.P. and commercial Electric Co. and Associated Electric and Metal Industry were granted electricity of 3 H.P. With the grant of electricity power to these electrical goods manufacturing concerns, they began to produce Table lamps and Fancy Brackets, and clusters and besides ordinary brackets. New designs also came into vogue. The result was obviously the profit to the manufacturers which was rather multiplied by the consumption of electrical goods by the government. This affected the electrical goods industry to a great deal. The growing fame of the industry made the public to extend loans to the electrical goods manufacturers.

But this progress stage of Industry could not persist for a longer time. Though the demand for Aligarh made electrical goods was not less yet due to the general upheaval in the country and an unstable political position prevailing at that time and mutual distrust among the chief communities i.e. Muslims and Hindus and the effects of transitional period just prior to independence in 1947 and subsequent disorders and communal riots the production of Ali- arh Electrical Goods Industry could not be increased.

b) Post Independence Period:

The national government after coming to power aimed at rapid industrialisation. It provided basic raw materials and placed a bar
on foreign goods to enter in local markets. This proved a boon to various industries of country and electrical goods industry at Aligarh also enjoyed additional facilities. It was a golden opportunity for its expansion. This industry began to get raw materials and facilities of electricity and coal. The new electric connections were granted so that machinery be put to use and the resultant produced goods may be beautiful and better. Along with this the prohibition on foreign goods due to the foreign exchange difficulties, the markets were now opened for the local made goods. Electrical goods producers expanded their respective firms and they began to chalk out new plans.

But again the industry got a blow. It was of such a severe notice that many small units have to be closed down and big firms were also upset by the communal riots which occurred in Delhi, Kanour, Agra. Muslim artisans began to migrate to Pakistan owing to the communal riots and there became a dearth of artisans in the industry as most of the skilled artisans belong to Muslim community in that period. There was all-round uncertainty. People did not like to port away with their money. It also caused financial crisis.

Slowly as the situation began to return to normal the industry also moved forward. Certain new inventions were made for the production of electrical goods. It was during this period that a fresh experiment was made in electrical line by a newly started firm named Sarswat Industrial Electric Corporation. Spray painting though not quite unknown to Aligarh, as being utilised to a very limited extend by other industrialists of Aligarh, e.g.
camera making concern, and Messrs Ganga Saran & Sons private Ltd., who dealt in paper and stationary was completely a new thing for electrical industry. The water tight fittings and bath room fittings were previously very roughly hand painted with varnish, colours and gave a rough looking. This firm started painting these articles with Wico paints by spray Machines and the articles were given a very fine look. These paints being water proof and sun-proof were of a lasting nature. These spray Wico painted articles were very much liked in the market. For a considerable time this remained a secret with Sarswat Industrial Corporation. After sometime the import of Wico paints was prohibited by the Indian government so other alternatives were sought for and this resulted in the use of stoving enamel paints manufactured by a British firm named British Paints(India)Ltd.

c) Under First Five Year Plan:

In First Plan three factors caused this industry to develop and expand. The government of India, in her First Plan engaged herself in big construction works i.e. construction of big office buildings, educational institutes and various other projects and dams. Every construction has to be electrified. So this factor resulted in heavy demand for electrical accessories. There was demand from Government itself and from people who were getting accustomed of using electric current for domestic purposes.

Not only the expectation were large but government also adopted a liberal attitude. Industrialists were granted power
connections and licenses etc. and grants by loans. Imperial electric trading Co. was granted an expansion of electric power from 5 H.P. to 15 H.P. and it came under the purview of Industries Development and Regulations Act 1951. They were now able to obtain licenses from the Central Government for the import of raw materials. During this time there were new entrants into this industry, leaving lock industry where their products were being discarded on account of introduction of padlocks, and lever brass padlock. Many of them now began to supply electrical goods and manufacture of electrical goods on small scale cropped up.

d) In Second Five Year Plan:

In this period our planners took more interest in the development of industries of the country. Due to this policy electrical manufactures of Ali-arh were also benefited to a great extent. Both the central and State governments provided loan to manufacturers of electrical goods. Their names are given in the coming table.

1. The Imperial Electric Trading Co. Rs.25,000
2. The Misra Electric Co. 7,500
3. Shri Piare Lal Sharma 5,000
4. M/s Associated Electric and Metal Industries 15,000

The production of some new electrical items also started in this period. Ceiling fittings combined shade and armature made out of Alluminium, began to be manufactured with the help of lathe machines. Shri Surendra Kumar started manufacture of cable wire under the name
and style of Indian Wire Product (P) Ltd., Premier Nagar, Aligarh in collaboration with Mr. Deena Nath Gupta Asia Cable Co., was set up by Mr. Jaipal Swarup for the manufacture of wire.

Some steps were taken for the production of brass holder. Finally in the year 1960, the owner of Imperial Electric Trading Co. started the manufacture of brass holders under the name and style of Kumar Industries. Government provided a loan worth Rs. 30,000.

e) During Third Plan Period:

In the beginning of this period, industry continued to register progress. Many new units came into existence in this period. At least 2 new units were established. Government continued to provide its sympathy by providing loans and sanction of raw materials quotas. Messrs United Electricals were sanctioned a loan of Rs. 30,000 to expand their workshop and increase their production. Messrs Singhal Engineering Co., started the manufacture of electric motors and is making good progress in this direction. Messrs United Traders also achieved considerable success in the production of conduit.

f) Present Position and Future Prospects:

At present there are five firms which are registered under Factories Act of 1948. During the last two or three years, more than
10 firms have come in existence. Line Material Co. has started functioning with capital investment of the order of 1.25 lakhs. A large number of new products are being produced. Line Material Co., is producing circuit boxes, High and Low tension boxes, Imperial Electric Co., has started producing street light fittings.

Several new firms are also seen operating. The secret of their survival together with big well-established firms, is the fact that they produce each and every single part of every article that they produce instead of getting it prepared from other artisan. It reduces cost. By selling at lower prices and also caring about quality of products they new firm have captured markets from older firm, the name of Airmal Electrical Co., is worth-mentioning in this connection.

The future prospects of this industry are also very bright. The demand for its products is increasing not within the country but even from outside countries. Until now Imperial Electric Co., was exporting the Nepal, now others have also secured some orders from Nepal.

Most of the manufactures have plans of expansion of their existing plants and three or four of them have been allotted sites in Industrial Estate where they will produce in larger quantity and also new products.
New items have been added in the list of electrical goods being produced at Aligarh, of this the production of street light fittings is of importance. Its production was taken up by Imperial Electric Co. The varieties of each product are also increasing since 1962. Now we get a number of varieties of a particular item.

Dislocation were caused by two Wars, firstly the war with China in 1962 and with Pakistan in 1965, caused uncertainties in the market. Orders from outside market centres were stopped. Railways did not accept to carry electrical goods and private truck owners hesitated in taking their trucks to long places due to fear of Government's imposition of emergency duty on them. All this resulted in slowing down the pace of growth which this industry was gaining.

One more unfortunate thing happened in 1965-66, The Associated Electric and Met-1 Co., which was in existence since 1940's stopped production. Its main raw material was metal product and it was banned by Government and there were some financial crisis also. So it has to removed from the picture. Now its owner Mr. Jaipal Swarup is getting famous as an advocate. With the expectation of bumper crop the over all prospects are brightening. Rural electrification is on increase and bumper crop will further add to it by increasing purchasing power of villagers.
PRODUCTS

Here we come to trace the information about the electrical products that are produced at Aliparh. We will discuss important products and their varieties, and important parts of some items. Products are numerous, so we will take account of only important products (which are not produced in limited quantity).

The main items are given here under separate heads:

1. BRACKETS: Brackets may be classified into two classes, i.e., ordinary brackets and Fancy brackets. We will discuss both of them.

   a) Ordinary Brackets: The brackets are fixed in the walls of the rooms of every electrified house and buildings to be fitted with holders to hold the electric bulbs. This article occupies a very important place due to its great demand and heavy production. Brackets are of various sizes according to length and diameter. The diameter of these brackets are 1/2", 5/8" generally and 3/4" in particular. As regards length, the following are the sizes generally in vogue say 4", 6", 8", 9", 10", 12". These brackets are made out of brass sheet as well as iron sheet. Ordinary bracket is composed of two parts i.e., one is base and second is pipe.

   i) Bases: These are generally moulded out of brass and are smoothed and then polished.

   ii) Pipes: The pipes are made out of sheets of brass as well as iron. The sheets are cut into pieces according to the requirements and are welded. The welded pipes are passed on to the workers who bend them on suitable design, cut threads on both ends, and thereafter give a final touch of filing. As this item has got an increased market throughout India as well as outside the consumption of ordinary brackets in very high, firstly because it is very cheap and
secondly in all the government buildings it is the only ordinary brackets which is utilised for fitting

B - Fancy Bracket:

These are generally made out of square pipe. The round pipes are turned into square shape through a machine. The square shapes and to give it a beautiful look; some other accessories are fitted with the pipe. There are certain fancy brackets which are made complete with the addition of round brass bases used with the ordinary bracket are again fitted with brass moulded and fitted bases in different designs say square,

2 - Table Lamps:

The other product which we find associated with every firm is table lamps. They are variously designed and have different length and breadth. They are very important from the point of view of sales and get a sound a ready market. They are demanded by students, officers and businessmen etc. Table lamps may be divided into two categories:

1) Brass table lamp stands.

ii) Coloured Table Lamps.

1) Brass Table Lamps: These are manufactured completely out of brass and involve high cost of production.

ii) Coloured Table Lamps: These coloured table lamps are more demanded than other table lamps because their cost of production is less. They are very attractive and beautiful.
3 - Cluster or Jhars:

Sometime back, Jhars were contributed to decoration of bungalows of Nawabs and used to cause great display at the time of various functions. But their place is being taken by tube lights. Jhars may be classified into two categories:

I) Clusters with Brass brackets
II) Clusters with Candle Light Brackets:

I - Clusters with Brass Brackets:

These clusters are manufactured with ordinary brass brackets which are generally used for the decoration purposes in marriages, exhibition fairs and feasts by the electrical contractors. The clusters with fancy brass brackets are used for the decoration of houses and buildings etc. These clusters are costly and generally are used by wealthy as well to do persons for the decoration of their drawing rooms. These clusters are very much used in South India.

II - Candle Light Jhars:

This product is the latest introduction of Aligarh electrical goods industry in the varieties of clusters. These clusters are more attractive in comparison to the cluster of brass brackets. The pieces of these clusters are not more and have not got an universal market and its consumption has been increasing day by day.
Some other important products of Aligarh Electrical Goods Industry are mentioned below:

1. Water tight brackets 
2. Bath-room fittings 
3. Shade carriers 
4. Hand Reflectors 
5. Lamp locks 
6. Ceiling fittings 
7. Water-tight switches 
8. Cable-Sockets 
9. Double Reflectors 
10. Wires 
11. Conduit fittings - Tee, Dend, Elbow, Joint Box or Junction box, Reducer-socket. 
12. Holders 
13. Pendent Rods 
14. Brass Tilting Nipples etc. 

The number of articles produced is increasing. But due to two reasons, quality has been effected, firstly due to keen competition amongst producers, and tendency of the public to purchase low priced goods. 

For photographs of some of these products see Appendix.