

WEEK: TEN.
SUBJECT: BASIC TECHNOLOGY.
CLASS: JSS2.
TOPIC: TRANSMISSION OF ELECTRICITY

TRANSMISSION OF ELECTRICITY

Transmission of electricity is the bulk movement of electrical energy from a generating plant to a sub-station usually close to the users.

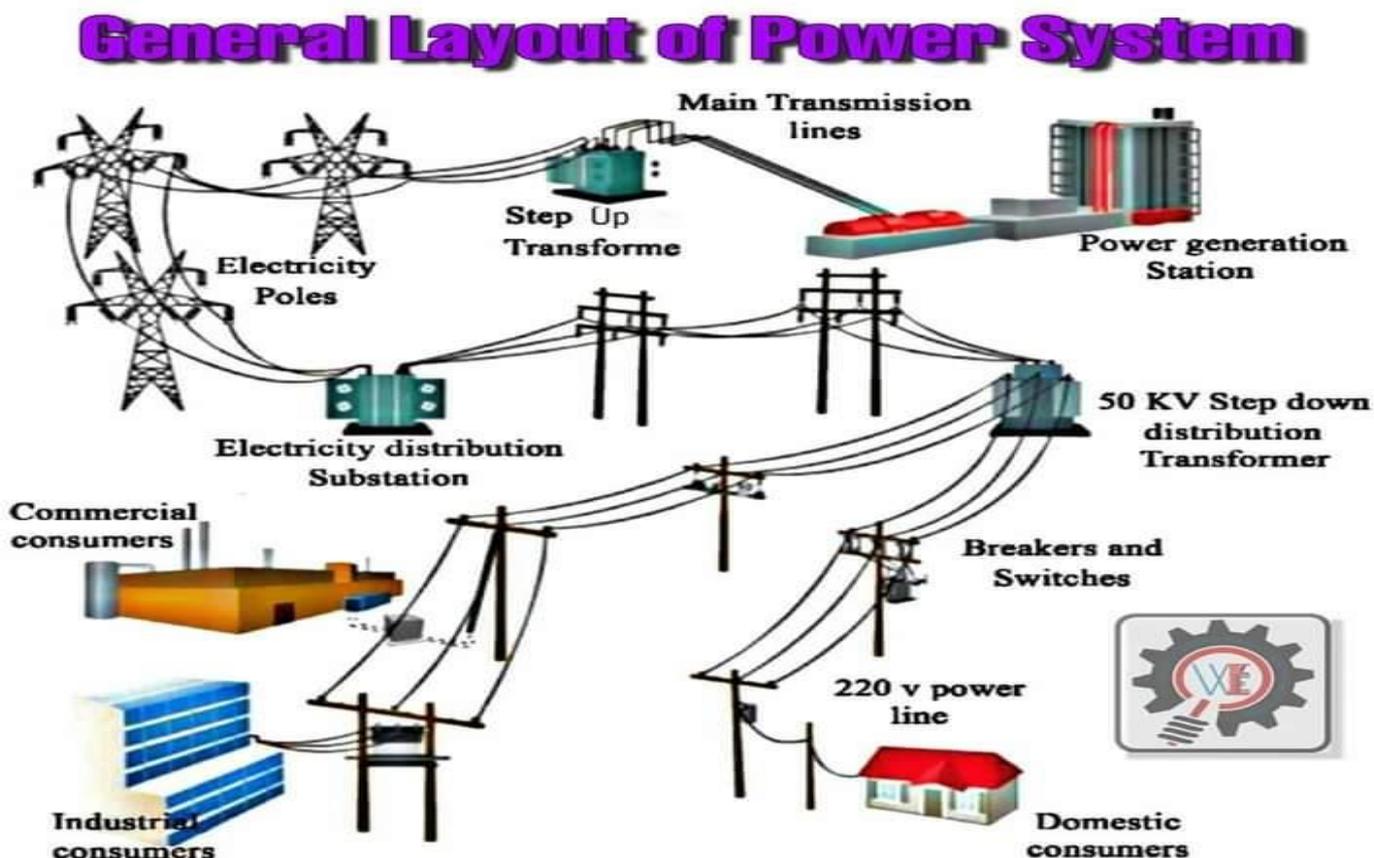
Distribution of electricity is the conveyance of electrical power from the substation (or transmission stations) to the premises of the final consumer.

Utilization of electricity is the consumption of electrical energy in homes, offices or industries using electrical appliances.

Components of a transmission system

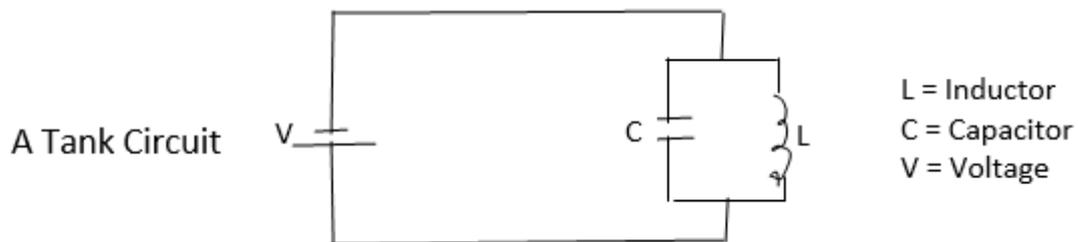
1. Generator control panel (synchronizer)
2. Circuit breaks (of high capacity)
3. Sub-stations
4. Transformer (step up and step down)
5. Insulators and lightning arrestors
6. Transmission lines
7. Line supports (Towers, poles, insulators cross-arm, line separators).
8. Feeder pillar
9. RMU (Ring main unit)
10. Bus-bar chamber and tube board etc.

HIGH AND LOW FREQUENCY TRANSMISSION OF ELECTRICITY

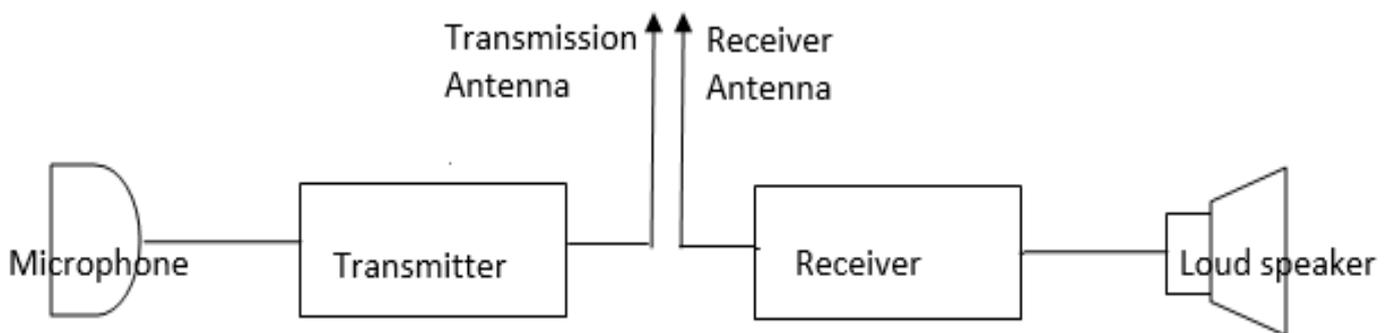


Electricity is transmitted by underground cables or overhead lines on poles or towers over distances. The lines which are usually steel cored aluminum or hand drawn copper are called transmission lines. Transmission of electric power is usually at very high and at low frequency in the range of 50 Hertz (Hz) in most parts of the world and up to 60 Hertz (Hz) in some countries.

In high frequency transmission, oscillating circuits which consist of a capacitor and inductor connected in parallel (tank circuit) is used for generating fast moving electrons.



ELEMENTS OF RADIO COMMUNICATION SYSTEM



1. **A microphone** receives sound energy and converts it to electrical energy in accordance with the information.
2. **A radio transmitter** generates the required radio (High frequency) wave.
3. **A transmitting aerial** sends out the wave into the space.
4. **A receiving aerial** captures the sent waves
5. **A radio receiver** selects the required information from all the capture ones and extracts the needed signals
6. **A loud speaker** converts the wave signal to sound that makes meaning.

ELECTRICITY UTILIZATION IN HOMES AND INDUSTRIES

These are two main classes of electricity consumers;

1. **Domestic consumers:** These include private homes which use little among of electricity for appliances such as; electric pressing iron, kettle, fans, TV set, air conditioners etc.

2. Industrial consumers: These are industries, big religious centres, schools and other high energy consumers. They use such things as; electric motor, furnaces /ovens, cold-rooms etc. which run almost 24 hours.

ASSIGNMENT

1. Draw the symbol of the following devices; transformer, circuit breaker, generator and fuse.
2. Explain how the radio set (system) works.