

- Sta IDOWU OCJ

SUBJECT: ELECTRICAL INSTALLATIONS CLASS SSS1

TOPIC: CIRCUIT PROTECTION

- There are two types of Circuit: (1) Domestic installation and Industrial installation.
- The installation has to be protected against excessive current flow in the circuit which is caused by breakdown of insulation either between live parts and earth fault or between live parts connected to different phases of supply
- Three types of protective devices are used against these fault conditions:
  - (1) FUSES
  - (2) CIRCUIT BREAKER
  - (3) VOLTAGE AND CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER

A fuse is a device that protects a circuit against damage from excessive current flowing in it by the melting of a fuse element.

- There are three types of fuses :
  - (1) Rewireable fuse
  - (2) Cartridge fuse
  - (3) High breaking capacity fuses. Rewireable fuse: This type of fuse is used in our homes and offices. This fuse is mostly used to protect delicate electronic equipment. It has a fuse wire that is carried in a removable fuse link. The fuse link may be of porcelain or other suitable insulating materials.
- Advantages:
  - (1) It is very cheap
  - (2) It is very easy to replace a blown fuse
  - (3) It is not bulky
  - (4) It is readily available
- Disadvantages
  - (1) It deteriorates over a period of time.
  - (2) It can not withstand heavy current
  - (3) The wrong size of fuse wire is sometimes used to replace the blown fuse

Practical Classwork: Pick any 13Amps plug and remove the fuse out. It has a tinny flexible wire inside. If it cuts, it can be rewired and that is why it is called Rewireable fuse. Now, get one that is cut and rewired it.

- Assignment:
  - Explain why using a fuse as a protective device in a domestic installation.
  - (2) Check your textbook and draw with your pencil standard Rewireable fuse.