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1. What is a circuit breaker?

Circuit breakers are devices automatically stop current from flowing if it reaches a certain threshold. A circuit breaker can also be defined as a device for switching that interrupts fault current when sensed. It can be considered to be an electromechanical or mechanical device that disturbs the high-magnitude abnormal current flow and functions similarly to a switch. The circuit breaker is primarily designed to complete or open an electrical circuit, hence protect the electrical system from destruction.

1. How does a circuit breaker differ from a switch?

* Circuit Breaker consists of electromechanical switch and a relay in a single box. While switches are simple mechanical devices.
* Circuit Breaker is a protection device (such as MCB, ACB, SF6, OCB etc) which disconnects the circuit in case of overload and short circuit faults. While, switches provide isolating function i.e. disconnecting the supply from all or a portion of installation e.g. in power plants or home wiring.

1. Which of the gases are employed in commercial gas blast circuit breaker?

* Air
* Sulfur hexafluoride circuit breaker {Sf6}

1. Why is the asymmetrical breaking current higher than the symmetrical breaking current in a circuit breaker?

When a fault takes place the current rises from near 0 value (load current in the order of amperes) to a much higher value (several thousands of amperes). The fault current waveform depends on the instant at which the fault takes place on the current waveform. It is usual for a fault current waveform to start with an asymmetrical wave shape (which is shifted up or down) and become symmetrical after a few cycles depending on the X/R ratio of the system**. This is explained mathematically as being the sum of a symmetrical waveform and a decaying dc component**.

1. What is meant by the rated voltage of a circuit breaker?

The rated voltage is the voltage value used to designate the switchgear, and its operating performance is related to it. The rated voltage shows the upper limit of the highest voltage of the systems the switchgear is designed for.

1. What are the types of test conducted on circuit breakers?

* Mechanical test
* Dielectric test
* Short circuit test
* Impulse test