

1. Miniature circuit breaker is a small

- Fuse
- Magnetic switch
- Electromagnetic switch(correct)
- Two way switch

2. Fuses work only

- In daylight
- Twice
- Once(correct)
- In moonlight

3. Using a high current fuse in a low current appliance is very

- Safe
- Dangerous(correct)
- Necessary
- Complicated

4. Circuit breakers work

- Constantly(correct)
- Only once
- When there is resistance
- When there is magnetic field

5. In oil circuit breaker, the oil is used for _____.

- Cooling
- Quenching(correct)
- Insulation
- All are correct

6. Define fuse?

Fuse

A safety device consisting of a strip of wire that melts and breaks an electric circuit if the current exceeds a safe level.

7. What is circuit breaker?

Circuit breaker

A circuit breaker is an automatically-operated electrical switch designed to protect an electrical circuit from damage caused by overload of electricity or short circuit. A circuit breakers function is to detect a fault condition and, by interrupting continuity, to immediately discontinue electrical flow.

8. Classification of Circuit breaker

The different types of high voltage circuit breakers include the following

- Air Circuit Breaker
- SF6 Circuit Breaker
- Vacuum Circuit Breaker
- Oil Circuit Breaker
- Air Circuit Breaker

9. Air Circuit Breaker

An Air Circuit Breaker (also known as an Air Blast Circuit Breaker or ACB) is an automatically operated electrical switch that uses air to protect an electrical circuit from damage caused by excess current from an overload or short circuit.

10. Types of air circuit breaker

The two types of air circuit breakers are

- Plain air circuit breaker
- Airblast Circuit Breaker

11. For high voltage, ac circuit breakers, the rated short circuit current is passed for

- (A) 0.01 sec
- (B) 0.1 sec
- (C) 3 seconds(correct)
- (D) 30 seconds.

12. The fault clearing time of a circuit breaker is usually

- (A) Few minutes
- (B) Few seconds
- (C) One second
- (D) Few cycles of supply voltage(correct)

13. The medium employed for extinction of arc in air circuit breaker is

- (A) SF6
- (B) Oil
- (C) Air(correct)
- (D) Water.

14. The pressure of SF6 gas in circuit breakers is of the order of

- (A) 100 mm Hg
- (B) 1 kg/cm²
- (C) 3 to 5 kg/cm²(correct)
- (D) 30 to 50 kg/cm².

15. The voltage that appears across the breaker contact after the circuit breaker is opened is called.

- Arc voltage
- Restriking voltage
- Recovery voltage(correct)
- Surge voltage

16. The SF6 circuit breakers are preferred for the substation with:

- 33 kV

- 11 kV
- 110 kV
- 220 kV(correct)

17. An ideal circuit breaker should offer

- Zero & infinite impedance before & after interruption respectively(correct)
- Infinity & zero impedance before & after interruption respectively
- Equal impedance before & after interruption

18. Which is the most serious problem in vacuum circuit breaker?

- Poor arc quenching
- Low thermal stability
- Current chopping(correct)
- All of the above

19. HRC fuses on a transformer provides protection against

- Insulation failure
- Internal faults
- External faults(correct)
- Low oil level

20. The most suitable circuit breaker for having autorecloser is a/an

- Minimum oil circuit breaker
- Air-blast circuit breaker(correct)
- Vacuum circuit breaker
- SF6 circuit breaker

21. The operating time values of fuse and circuit breakers are:

- For fuse: around 0.02 second, and for circuit breaker: (0.002 to 0.005) second
- For fuse: around 0.2 second, and for circuit breaker: (0.2 to 0.5) second
- For fuse: around 0.002 second, and for circuit breaker: (0.02 to 0.05) second(correct)

- For fuse: around 0.02 second, and for circuit breaker: (0.2 to 0.5) second

22. How Does A Circuit Breaker Different From Switch?

Answer :Switch is just a device when can be able to open and close the circuit during normal operation. Whereas on the other hand circuit breaker has the ability to open and close the contacts during abnormal or fault conditions. Thus circuit breaker has the potential to break and make heavy short circuit currents. Auto-reclosures in the circuit beaker has the ability to re-close after certain designed duration to verify whether the short circuit was cleared.

23. Name The Materials Used For The Contacts Of Vacuum Circuit Breakers?

Answer :Copper-Bismuth, Copper-lead, Copper-tellurium, Silver-bismuth, Silver-lead and Silver-tellurium are some of the alloys employed as contact materials in the vacuum circuit breakers

24. What Are The Duties Of Circuit Breakers?

Answer :

Some of the duties of the circuit breakers are listed below:

Interruption of small inductive currents

Switching of unloaded transmission lines and unloaded cables

Switching of capacitor banks and reactors

Interruption of terminal faults

Interruption of short line faults

Asynchronous switching

25. In What Value The Making Current Of A 3-phase 3000 Mva, 33 Kv Breaker?

Answer :

The making current is normally specified in peak value.

$$\text{Breaking current} = 3000 / (\sqrt{3} \times 33) \text{ KA} = 52.48 \text{ KA}$$

$$\text{Making current} = 2.55 \times 52.48 = 133.82 \text{ KA.}$$