

## Electrical Quiz: 3

Contribution by: C.Kaliaperumal, Chief Engineer/TNEB/India

31. What are the cleaning agents for electrical equipment?

- (i) Carbon Tetra Chloride (CTC)
- (ii) Iso- Propynol Alcohol.
- (iii) Collonite for bushing cleaning.

Never use Kerosene oil

32. What shall be the rating of the CTs of a breaker?

It shall be the continuous rating of the breaker.

For example, if the continuous rating of the breaker is 1200 A, the CT Ratio shall be 1200-800-400/1--1 A.

33. What is the main reason for the conservator tank in a transformer?

- (i) To provide space for expansion of transformer oil due to heating.
- (ii) To minimize the quantity of oil in contact with air to avoid oxidation and hence sludging. Conservator tank capacity may be 5 % of main tank capacity.

34. What precautions are must while erecting PTs?

The primary neutral of PTs should be properly earthed to avoid potential rise with respect to earth under fault conditions and damage the windings. Also, its secondary voltage may contain third harmonics and there will be ratio error.

35. What is meant by positively/ negatively charged one?

When an element / terminal is capable of losing an electron ,it is said to be positively charged. Reversely, if an element / terminal gains an electron, it is said to be negatively charged.

36. What are thermistors?

Alloys of semiconductors whose resistance vary with temperature. Used in Generators,motors,etc for temp monitoring.

37.What are the units in MKS system for power and energy?

Power:Joule/Sec.

Energy:Joules(Watts).

Eg:One unit(kWhr) :3600 kJ.

38. The tungsten filament of 60 W or 100 W bulb, which is thinner?

60 W bulb filament is thinner than that of 100 W bulb.

39. Where is the electric field in a current carrying conductor?

Inside the conductor and parallel to it.

40. Why heat is produced in a conductor when current passing through it?

Due to collision of electron on atom.

41. When the power delivered in a cell is maximum?

When its load resistance equals to its internal resistance.

42. What is the direction of flow of current inside & outside the

cell?

Inside the cell, from negative plate to positive plate and outside the cell, from positive plate to negative plate.

43. What is the property of heater coil?

High resistance and high melting point (Nichrome wire).

44. What is the charge of an electron?

$1.6 \times 10^{-19}$  Coulombs.

45. What is the potential of earth?

Zero.

46. What is the electric field inside a charged conductor?

Zero.

47. What is the property of a fuse wire?

High resistance with low melting point (Alloy of lead & tin wire).

48. How the loads are connected in a house wiring?

Parallel to the Power point so that the voltage to all the loads is constant.

49. Which are the charge carriers constituting current in metals, liquids, gases and semiconductors?

Metals: Free electrons.

Liquids: Positive & Negative ions.

Gases: Positive ions & free electrons.

Semi conductors: Holes & free electrons.

50. What is dielectric strength?

The maximum value of potential gradient that can be safely applied against the ends of a dielectric.

51. What is the dielectric strength of air?

3 kV/mm.

52. What is lightning?

Discharge of electrostatic charges from clouds.

53. How sound occurs in lightning?

Lightning heats air - expands - lighter air rises up - creates vacuum - neighbouring air rapidly fills up the vacuum causing heavy sound. That's why thunder is heard after lightning.

54. What is an electrolyte?

A liquid which allows current through them and also dissociates ions.

Eg: Salt solutions of acids & bases. Potassium hydroxide, Sodium Chloride, Nitric Acid, Sulphuric Acid, Sodium Acetate, Chloric acid, etc.

55. Which is the only liquid metal conductor?

Mercury. Used in Bucholtz's relay float switches.

56. Name the liquids which won't allow passage of current?

Distilled water & vegetable oils.

57. Which device accelerate electrons?

Betatron. The device with a circular vacuum tube placed in a magnetic field, into which electrons are injected used to accelerate electrons to high energy.

58. What is hysteresis loss?

The electrical loss occurred while an AC current magnetise and demagnetise an iron core again & again.

59. Which electrical quantity remain unchanged in the transformers?

Frequency.

[60.](#) In electromagnetic induction, the induced emf is independent of which parameter?

Winding resistance.