

## Electrical quiz 6

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11. What are the sources of oscillations in the system itself?

EHV Transformers.

They have appreciable electrostatic capacitance between turns and also to ground which may create high frequency oscillations in the transformer itself and also produce voltage rise and may puncture the insulation.

12. How to minimise lightning disturbance ?

(i) By use of one or two ground wires grounded at frequent intervals in EHV lines especially at one tower before the entry to SS.

(ii) By installing Surge Arresters across the bus bars at generating station and sub station entries.

(iii) By operating the EHV lines just below the critical corona voltage so that any disturbance causes corona discharge thus dissipating the extra disturbance energy.

13. What are the types of Surge Arresters(SA)?

[a.Rod](#) Gap Arrester.

b.Sphere Gap Arrester.

c.Horn Gap Arrester.

[d.Mu](#)ltiple-Gap Arrester.

[e.Im](#)pulse Protective Gap.

f.Electrolytic Arrester.

g.Expulsion Type Lightning Arrester.

[h.Val](#)ve Type Lightning Arresters.

[i.Thy](#)rite Lightning Arrester.

[j.Auto](#) valve Arrester.

k.Oxide Film Arrester.

[1.Me](#)tal Oxide Surge Arresters (Widely used).

14. What are the parameters that determine the size of the conductor?

- [a.](#)Current carrying capacity.
  - [b.](#)Required voltage regulation.
  - [c.](#)Corona.
  - [d.](#)Permissible energy loss.
  - [e.](#)Mechanical strength.
- Last but not the least,
- [f.](#)Cost.

15. Why two separate conductors, viz. twin moose or quadra moose are used?

To reduce the inductive drop. If two separate lines of half of its cross section against a single line for a given cross section of conductor, with interlink at regular intervals are used, the inductive drop will be lesser.

16.Which materials are used for making insulator?

- a.Porcelain.
- b.Polimer.
- [c.](#)Glass.
- [d.](#)Patented compounds.

17. What are the reasons for failure of insulators?

- a.Absorbtion of moisture due to porosity.
- [b.](#)Brittleness due to over firing.
- [c.](#)Com**bi**ned electrical and mechanical stress.
- [d.](#)Cracks due to sudden change in temperature.
- [e.](#)Me**ch**anical stresses due to unequal temperature coefficients of the Rim cap.
- [f.](#)Th**e** cement hydrates for a long time,increase in volume which stresses the porcelain.

18. What for arcing rings are used in EHV lines?

To protect both the lines and insulators from the power of arc.

19. What are the advantages in neutral grounded system?

- a.Except under unusual transient conditions, the line to neutral voltage

never exceeds the line to line voltage .

b.A grounding on one line trips the breaker and warns the operator of trouble.

c.The dynamic arcing to ground has but little tendency to high frequency oscillations.

d.Protection of power system will be more reliable.

e.Communication interference due to electrostatic imbalance will be minimised.

20. What are the disadvantages in neutral grounded system?

a.The line will be inoperative for a single line ground fault.

b.The ground fault current may produce heavy mechanical forces on generator and transformer windings.

c.The dynamic arcing to ground may shatter the insulators and even burn off the conductors.

Neutral grounded system is more preferable except in IT industry where sophisticated equipment are used and uninterrupted power supply is must.